



# **STIC Search Report**

**EIC 3700**

**STIC Database Tracking Number: 102528**

**TO: Cameron Saadat**  
**Location: cp2 10c04**  
**Art Unit: 3713**  
**Monday, September 08, 2003**

**Case Serial Number: 09/839638**

**From: John Sims**  
**Location: EIC 3700**  
**CP2, 2C08**  
**Phone: 308-4836**

**john.sims@uspto.gov**

## **Search Notes**

Here are your search results. I've noted those results that appear to be most relevant, but also included some tangential material.

12/3/1 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

015378333 \*\*Image available\*\*

WPI Acc No: 2003-439271/200341

XRPX Acc No: N03-350478

**Surgical instrument e.g. endoscope for medical examination, applies force to elongated endo vascular tool as haptic indication to user, when elongated tool is moved to predetermined position by user**

Patent Assignee: BROWN J M (BROW-I); COHEN R F (COHE-I); CUNNINGHAM R L (CUNN-I); FELDMAN P G (FELD-I); MERRIL G L (MERR-I)

Inventor: BROWN J M ; COHEN R F; CUNNINGHAM R L ; FELDMAN P G ; MERRIL G L

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No      | Kind | Date     | Applicat No   | Kind | Date     | Week     |
|----------------|------|----------|---------------|------|----------|----------|
| US 20030040737 | A1   | 20030227 | US 2000189838 | P    | 20000316 | 200341 B |
|                |      |          | US 2001811358 | A    | 20010316 |          |

Priority Applications (No Type Date): US 2000189838 P 20000316; US 2001811358 A 20010316

Patent Details:

| Patent No      | Kind | Lan | Pg          | Main IPC                | Filing Notes  |
|----------------|------|-----|-------------|-------------------------|---------------|
| US 20030040737 | A1   | 11  | A61B-017/00 | Provisional application | US 2000189838 |

12/3/2 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

015078808 \*\*Image available\*\*

WPI Acc No: 2003-139326/200313

XRPX Acc No: N03-110646

**Medical practitioner trainee interface method for medical training simulation, involves outputting haptic sensation when cursor interacts with region within graphic representation of portion of human or animal body**

Patent Assignee: COHEN R F (COHE-I); CUNNINGHAM R L (CUNN-I); DUMAS R H (DUMA-I); FELDMAN P G (FELD-I); MERRIL G L (MERR-I); TASTO J L (TAST-I)

Inventor: COHEN R F; CUNNINGHAM R L ; DUMAS R H; FELDMAN P G ; MERRIL G L ; TASTO J L

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No      | Kind | Date     | Applicat No   | Kind | Date     | Week     |
|----------------|------|----------|---------------|------|----------|----------|
| US 20020163497 | A1   | 20021107 | US 2001848966 | A    | 20010504 | 200313 B |

Priority Applications (No Type Date): US 2001848966 A 20010504

Patent Details:

| Patent No      | Kind | Lan | Pg          | Main IPC | Filing Notes |
|----------------|------|-----|-------------|----------|--------------|
| US 20020163497 | A1   | 41  | G09G-005/00 |          |              |

12/3/3 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

014044968 \*\*Image available\*\*

WPI Acc No: 2001-529181/200158

Related WPI Acc No: 1999-458990

XRPX Acc No: N01-392745

**Interface device for surgical instruments, connects surgical instrument with computers which control graphic image by using signal output by sensor**

Patent Assignee: BROWN J M (BROW-I); COHEN R F (COHE-I); CUNNINGHAM R L (CUNN-I); FALK R B (FALK-I)

Inventor: **BROWN J M** ; COHEN R F; **CUNNINGHAM R L** ; FALK R B

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No      | Kind | Date     | Applicat No   | Kind | Date     | Week     |
|----------------|------|----------|---------------|------|----------|----------|
| US 20010016804 | A1   | 20010823 | US 9625433    | A    | 19960904 | 200158 B |
|                |      |          | US 97923477   | A    | 19970904 |          |
|                |      |          | US 9872672    | A    | 19980128 |          |
|                |      |          | US 98110661   | A    | 19981202 |          |
|                |      |          | US 99116545   | A    | 19990121 |          |
|                |      |          | US 99237969   | A    | 19990127 |          |
|                |      |          | US 2000738424 | A    | 20001215 |          |

Priority Applications (No Type Date): US 2000738424 A 20001215; US 9625433 P 19960904; US 97923477 A 19970904; US 9872672 P 19980128; US 98110661 P 19981202; US 99116545 P 19990121; US 99237969 A 19990127

Patent Details:

| Patent No      | Kind | Lan Pg | Main IPC    | Filing Notes                       |
|----------------|------|--------|-------------|------------------------------------|
| US 20010016804 | A1   | 35     | G06G-007/48 | Provisional application US 9625433 |

CIP of application US 97923477  
Provisional application US 9872672  
Provisional application US 98110661  
Provisional application US 99116545  
CIP of application US 99237969  
CIP of patent US 6106301

12/3/4 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

012652885 \*\*Image available\*\*

WPI Acc No: 1999-458990/199938

Related WPI Acc No: 1998-193862; 2001-529181

XRPX Acc No: N99-343338

**Interface device for computerized medical simulation systems**

Patent Assignee: HT MEDICAL SYSTEMS INC (HTME-N); IMMERSION MEDICAL INC (IMME-N)

Inventor: ALEXANDER D; **BROWN J M** ; CABAHUG E; CHURCHILL P J; COHEN R F;

**CUNNINGHAM R L** ; FELDMAN B; FONTAYNE D; **MERRIL G L** ; TURCHI M; BROWN M J

Number of Countries: 082 Number of Patents: 006

Patent Family:

| Patent No  | Kind | Date     | Applicat No  | Kind | Date     | Week     |
|------------|------|----------|--------------|------|----------|----------|
| WO 9939317 | A1   | 19990805 | WO 99US1664  | A    | 19990127 | 199938 B |
| AU 9922420 | A    | 19990816 | AU 9922420   | A    | 19990127 | 200002   |
| GB 2349730 | A    | 20001108 | WO 99US1664  | A    | 19990127 | 200058   |
|            |      |          | GB 200021185 | A    | 20000829 |          |
| EP 1103041 | A1   | 20010530 | EP 99902444  | A    | 19990127 | 200131   |
|            |      |          | WO 99US1664  | A    | 19990127 |          |
| GB 2349730 | B    | 20030409 | WO 99US1664  | A    | 19990127 | 200325   |
|            |      |          | GB 200021185 | A    | 20000829 |          |
| GB 2384613 | A    | 20030730 | GB 200021185 | A    | 19990127 | 200351   |
|            |      |          | GB 20032744  | A    | 20030206 |          |

Priority Applications (No Type Date): US 99116545 P 19990121; US 9872672 P 19980128; US 98105661 P 19981026

John Sims EIC 3700 308-4836

Patent Details:

| Patent No   | Kind | Lan | Pg | Main IPC    | Filing Notes                    |
|---|------|-----|----|-------------|---------------------------------|
| WO 9939317  | A1   | E   | 57 | G09B-023/28 |                                 |
| Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZW |      |     |    |             |                                 |
| Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW  |      |     |    |             |                                 |
| AU 9922420  | A    |     |    |             | Based on patent WO 9939317      |
| GB 2349730  | A    |     |    | G09B-023/28 | Based on patent WO 9939317      |
| EP 1103041  | A1   | E   |    | G09B-023/28 | Based on patent WO 9939317      |
| Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE  |      |     |    |             |                                 |
| GB 2349730  | B    |     |    | G09B-023/28 | Based on patent WO 9939317      |
| GB 2384613  | A    |     |    | G09B-023/28 | Div ex application GB 200021185 |

12/3/5 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

012652883 \*\*Image available\*\*

WPI Acc No: 1999-458988/199938

XRPX Acc No: N99-343336

**Instrument interface for vascular access simulation systems**

Patent Assignee: HT MEDICAL SYSTEMS INC (HTME-N); IMMERSION MEDICAL INC (IMME-N)

Inventor: CUNNINGHAM R L ; FELDMAN B; FELDMAN P; MERRIL G L ; CUNNINGHAM R L

Number of Countries: 082 Number of Patents: 010

Patent Family:

| Patent No      | Kind | Date     | Applicat No   | Kind | Date     | Week     |
|----------------|------|----------|---------------|------|----------|----------|
| WO 9939315     | A2   | 19990805 | WO 99US1822   | A    | 19990128 | 199938 B |
| AU 9924785     | A    | 19990816 | AU 9924785    | A    | 19990128 | 200002   |
| GB 2349731     | A    | 20001108 | WO 99US1822   | A    | 19990128 | 200058   |
|                |      |          | GB 200021186  | A    | 20000829 |          |
| EP 1051698     | A2   | 20001115 | EP 99904380   | A    | 19990128 | 200059   |
|                |      |          | WO 99US1822   | A    | 19990128 |          |
| JP 2002502058  | W    | 20020122 | WO 99US1822   | A    | 19990128 | 200211   |
|                |      |          | JP 2000529698 | A    | 19990128 |          |
| US 6470302     | B1   | 20021022 | US 9872809    | P    | 19980128 | 200273   |
|                |      |          | US 99238559   | A    | 19990128 |          |
| US 20030069719 | A1   | 20030410 | US 9872809    | P    | 19980128 | 200327   |
|                |      |          | US 99238559   | A    | 19990128 |          |
|                |      |          | US 2002238990 | A    | 20020909 |          |
| GB 2381933     | A    | 20030514 | GB 200021186  | A    | 20000829 | 200333   |
|                |      |          | GB 20033858   | A    | 20030219 |          |
| GB 2349731     | B    | 20030604 | WO 99US1822   | A    | 19990128 | 200345   |
|                |      |          | GB 200021186  | A    | 20000829 |          |
| GB 2381933     | B    | 20030813 | GB 200021186  | A    | 19990128 | 200355   |
|                |      |          | GB 20033858   | A    | 20030219 |          |

Priority Applications (No Type Date): US 9872809 P 19980128; US 99238559 A 19990128; US 2002238990 A 20020909

Patent Details:

| Patent No   | Kind | Lan | Pg | Main IPC    | Filing Notes |
|---|------|-----|----|-------------|--------------|
| WO 9939315  | A2   | E   | 29 | G09B-000/00 |              |
| Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR |      |     |    |             |              |

TT UA UG US UZ VN YU ZW  
 Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
 IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW  
 AU 9924785 A Based on patent WO 9939315  
 GB 2349731 A G09B-023/28 Based on patent WO 9939315  
 EP 1051698 A2 E G09B-023/28 Based on patent WO 9939315  
 Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI  
 LU MC NL PT SE  
 JP 2002502058 W 38 G09B-009/00 Based on patent WO 9939315  
 US 6470302 B1 G06G-007/48 Provisional application US 9872809  
 US 20030069719 A1 G06G-007/48 Provisional application US 9872809  
 Cont of application US 99238559  
 Cont of patent US 6470302  
 GB 2381933 A G09B-023/28 Div ex application GB 200021186  
 GB 2349731 B G09B-023/28 Based on patent WO 9939315  
 GB 2381933 B G09B-023/28 Div ex application GB 200021186

12/3/6 (Item 6 from file: 350)  
 DIALOG(R)File 350:Derwent WPIX  
 (c) 2003 Thomson Derwent. All rts. reserv.

011776952 \*\*Image available\*\*  
 WPI Acc No: 1998-193862/199817  
 Related WPI Acc No: 1999-458990  
 XRPX Acc No: N98-153386

**Interface device for simulation system enabling user to perform medical procedure - has navigation peripheral for user selective manipulation, provides navigation data of interface manipulation, simulates traversal of navigation instrument via simulated anatomy in accordance with manipulation**

Patent Assignee: HT MEDICAL SYSTEMS INC (HTME-N); HT MEDICAL INC (HTME-N)  
 Inventor: MERRIL G L ; FELDMAN P G ; MEGLAN D A  
 Number of Countries: 078 Number of Patents: 003  
 Patent Family:

| Patent No  | Kind | Date     | Applicat No  | Kind | Date     | Week     |
|------------|------|----------|--------------|------|----------|----------|
| WO 9810387 | A2   | 19980312 | WO 97US15552 | A    | 19970904 | 199817 B |
| AU 9742495 | A    | 19980326 | AU 9742495   | A    | 19970904 | 199832   |
| US 6106301 | A    | 20000822 | US 9625433   | A    | 19960904 | 200042   |
|            |      |          | US 97923477  | A    | 19970904 |          |

Priority Applications (No Type Date): US 9625433 P 19960904; US 97923477 A 19970904

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9810387 A2 E 61 G08B-000/00

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU  
 CZ DE DK EE ES FI GB GE GH HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU  
 LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA  
 UG US UZ VN YU ZW

Designated States (Regional): AT BE CH DE DK EA ES FI FR GB GH GR IE IT  
 KE LS LU MC MW NL OA PT SD SE SZ UG ZW

AU 9742495 A A61B-017/00 Based on patent WO 9810387

US 6106301 A F41G-003/26 Provisional application US 9625433

?

6/AB/1 (Item 1 from file: 350)  
DIALOG(R)File 350:(c) 2003 Thomson Derwent. All rts. reserv.

Abstract (Basic): WO 200118617 A1

Abstract (Basic):

NOVELTY - A **haptic** interface comprises an electrorheological fluid-based component coupled with an articulating member. The forces on the member are transmitted to a human operator via a change in viscosity of the fluid in proportion to a force to be transmitted.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for a remote mechanical mirroring system comprising the **haptic** interface. The **haptic** interface is affixed to an end-effector defined at an extremity of a robotic arm. It is integrated with an interactive **computer modeling** system, and further integrated with a force feedback multiple degree-of-freedom manipulator(s).

USE - The **haptic** interface enables human operators to feel and intuitively mirror the stiffness or forces at remote sites for the control of robots as human surrogates. It can be used in simulators, in military applications, as a bomb disabler, the entertainment industry, the nuclear industry, including removal of hazardous waste and decommissioning of nuclear sites, space robotics, medical research and education, telesurgery, and rehabilitation of patients from **surgery** or stroke.

ADVANTAGE - The inventive **haptic** interface accurately simulates the mobile and sensory capabilities of anthropomorphic movement. It accurately detects interaction between the wearer and the environment, and has improved lifting capabilities.

pp; 44 DwgNo 0/13

?

**18/3/1 (Item 1 from file: 347)**

DIALOG(R)File 347:JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

07582416 \*\*Image available\*\*

HEART LOAD EVALUATING DEVICE

PUB. NO.: 2003-076259 [JP 2003076259 A]

PUBLISHED: March 14, 2003 (20030314)

INVENTOR(s): HOTEHAMA MASARU

TAKEMORI TOSHIKAZU

APPLICANT(s): OSAKA GAS CO LTD

APPL. NO.: 2001-272039 [JP 20011272039]

FILED: September 07, 2001 (20010907)

**18/3/2 (Item 2 from file: 347)**

DIALOG(R)File 347:JAPIO

(c) 2003 JPO & JAPIO. All rts. reserv.

06838860 \*\*Image available\*\*

INTRACARDIAL ELECTRICAL PHENOMENON-DIAGNOSING DEVICE

PUB. NO.: 2001-066355 [JP 2001066355 A]

PUBLISHED: March 16, 2001 (20010316)

INVENTOR(s): OYU SHIGEHARU

TAKADA YOICHI

AIDA SATOSHI

APPLICANT(s): TOSHIBA CORP

APPL. NO.: 11-243863 [JP 99243863]

FILED: August 30, 1999 (19990830)

**18/3/3 (Item 1 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

015452765 \*\*Image available\*\*

WPI Acc No: 2003-514907/200349

XRFX Acc No: N03-408536

**Method and device for computer based segmental visual processing and analysis of myocardial diastolic wall thickness and systolic wall thickness increases using a segmental analysis tool for myocardial wall thickness increase**

Patent Assignee: FROELICH M (FROE-I)

Inventor: FROELICH M

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No   | Kind | Date     | Applicat No | Kind | Date     | Week     |
|-------------|------|----------|-------------|------|----------|----------|
| DE 10158229 | A1   | 20030612 | DE 1058229  | A    | 20011115 | 200349 B |

Priority Applications (No Type Date): DE 1058229 A 20011115

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

DE 10158229 A1 3 G06F-019/00

**18/3/4 (Item 2 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

015340981      **\*\*Image available\*\***

WPI Acc No: 2003-401919/200338

XRPX Acc No: N03-320549

**Three-dimensional object reproduction method e.g. for pathologic collection of heart with defects, involves smoothing and/or equalizing picture data of 3D object so as to obtain modified picture data**

Patent Assignee: DKFZ DEUT KREBSFORSCHUNGSZENTRUM (DKFZ-N); DEUT

KREBSFORSCHUNGSZENTRUM STIFTUNG (DEKR-N)

Inventor: MAKABE M; MEINZER H; THORN M

Number of Countries: 002    Number of Patents: 002

Patent Family:

| Patent No      | Kind | Date     | Applicat No   | Kind | Date     | Week        |
|----------------|------|----------|---------------|------|----------|-------------|
| US 20030030635 | A1   | 20030213 | US 2002167542 | A    | 20020611 | 200338    B |
| CA 2380911     | A1   | 20021212 | CA 2380911    | A    | 20020404 | 200345      |

Priority Applications (No Type Date): EP 2001114253 A 20010612

Patent Details:

| Patent No      | Kind | Lan | Pg | Main IPC    | Filing Notes |
|----------------|------|-----|----|-------------|--------------|
| US 20030030635 | A1   |     | 6  | G06T-015/00 |              |
| CA 2380911     | A1   | E   |    | G06F-003/00 |              |

**18/3/5            (Item 3 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2003    Thomson Derwent. All rts. reserv.

015261422      **\*\*Image available\*\***

WPI Acc No: 2003-322351/200331

XRPX Acc No: N03-257558

**Heart condition evaluation apparatus has circulating system modeling unit that calculates e.g. blood pressure and heart rate based on movement operating time and movement strength index**

Patent Assignee: OSAKA GAS CO LTD (OSAG )

Number of Countries: 001    Number of Patents: 001

Patent Family:

| Patent No     | Kind | Date     | Applicat No   | Kind | Date     | Week        |
|---------------|------|----------|---------------|------|----------|-------------|
| JP 2003076259 | A    | 20030314 | JP 2001272039 | A    | 20010907 | 200331    B |

Priority Applications (No Type Date): JP 2001272039 A 20010907

Patent Details:

| Patent No     | Kind | Lan | Pg | Main IPC    | Filing Notes |
|---------------|------|-----|----|-------------|--------------|
| JP 2003076259 | A    |     | 23 | G09B-009/00 |              |

**18/3/6            (Item 4 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2003    Thomson Derwent. All rts. reserv.

014797308

WPI Acc No: 2002-618014/200266

Related WPI Acc No: 1993-272579; 1993-272580; 1997-117780; 1998-168893; 1999-008656

XRAM Acc No: C02-174607

**Treating or preventing atherosclerosis in mammals comprising extracting aliquot of blood from subject which is treated ex vivo with stressors e.g. oxidizing agent, ultraviolet radiation, and administering treated blood to subject**

Patent Assignee: BOLTON A E (BOLT-I)

Inventor: BOLTON A E

Number of Countries: 001    Number of Patents: 001



Patent Family:

| Patent No      | Kind | Date     | Applicat No | Kind | Date     | Week     |
|----------------|------|----------|-------------|------|----------|----------|
| US 20020086064 | A1   | 20020704 | US 92832798 | A    | 19920207 | 200266 B |
|                |      |          | US 92941327 | A    | 19920904 |          |
|                |      |          | US 94352802 | A    | 19941201 |          |
|                |      |          | US 96754348 | A    | 19961122 |          |
|                |      |          | US 99436243 | A    | 19991109 |          |

Priority Applications (No Type Date): US 99436243 A 19991109; US 92832798 A 19920207; US 92941327 A 19920904; US 94352802 A 19941201; US 96754348 A 19961122

Patent Details:

| Patent No      | Kind | Lan Pg | Main IPC    | Filing Notes                   |
|----------------|------|--------|-------------|--------------------------------|
| US 20020086064 | A1   | 17     | A61K-033/00 | CIP of application US 92832798 |
|                |      |        |             | CIP of application US 92941327 |
|                |      |        |             | CIP of application US 94352802 |
|                |      |        |             | CIP of application US 96754348 |

18/3/7 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX  
(c) 2003 Thomson Derwent. All rts. reserv.

014612635 \*\*Image available\*\*  
WPI Acc No: 2002-433339/200246  
Related WPI Acc No: 2002-518280  
XRAM Acc No: C02-123138  
XRPX Acc No: N02-340933

**Treatment of heart failure comprises delivering a liquid filler into the left ventricle and converting the filler into a noncompressible rigid state**

Patent Assignee: JAYARAMAN S (JAYA-I)  
Inventor: JAYARAMAN S  
Number of Countries: 001 Number of Patents: 001  
Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| US 6360749 | B1   | 20020326 | US 98103824 | A    | 19981009 | 200246 B |
|            |      |          | US 99414708 | A    | 19991008 |          |

Priority Applications (No Type Date): US 98103824 P 19981009; US 99414708 A 19991008

Patent Details:

| Patent No  | Kind | Lan Pg | Main IPC    | Filing Notes                        |
|------------|------|--------|-------------|-------------------------------------|
| US 6360749 | B1   | 20     | A61B-019/00 | Provisional application US 98103824 |

18/3/8 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX  
(c) 2003 Thomson Derwent. All rts. reserv.

013860506 \*\*Image available\*\*  
WPI Acc No: 2001-344718/200137  
Related WPI Acc No: 2003-017515  
XRPX Acc No: N01-249641

**Mathematical model, e.g. of human heart and thorax, has base objects whose spatial relationships are altered by transformation operators to cause variation in geometry of model**

Patent Assignee: GENERAL ELECTRIC CO (GENE )  
Inventor: CLINE H E; EDIC P M; ISHAQUE A N; YAVUZ M  
Number of Countries: 002 Number of Patents: 002  
Patent Family:

John Sims EIC 3700 308-4836

| Patent No     | Kind | Date     | Applicat No   | Kind | Date     | Week     |
|---------------|------|----------|---------------|------|----------|----------|
| DE 10057810   | A1   | 20010531 | DE 1057810    | A    | 20001122 | 200137 B |
| JP 2001222705 | A    | 20010817 | JP 2000355153 | A    | 20001122 | 200155   |

Priority Applications (No Type Date): US 99448353 A 19991123

Patent Details:

| Patent No     | Kind | Lan | Pg | Main IPC    | Filing Notes |
|---------------|------|-----|----|-------------|--------------|
| DE 10057810   | A1   | 14  |    | G06T-017/00 |              |
| JP 2001222705 | A    | 47  |    | G06T-001/00 |              |

18/3/9 (Item 7 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

013726592 \*\*Image available\*\*

WPI Acc No: 2001-210822/200121

XRPX Acc No: N01-150655

**Computational model for simulating and predicting electrical and chemical dynamics of heart, utilizes computerized representation of heart anatomy and mathematical equations describing spatio-temporal behavior of biophysical quantities**

Patent Assignee: PHYSIOME SCI INC (PHYS-N)

Inventor: ROUNDS D; SCOLLAN D; WINSLOW R

Number of Countries: 084 Number of Patents: 005

Patent Family:

| Patent No     | Kind | Date     | Applicat No   | Kind | Date     | Week     |
|---------------|------|----------|---------------|------|----------|----------|
| WO 200046689  | A1   | 20000810 | WO 99US2755   | A    | 19990203 | 200121 B |
| AU 9926652    | A    | 20000825 | AU 9926652    | A    | 19990203 | 200121   |
|               |      |          | WO 99US2755   | A    | 19990203 |          |
| EP 1149347    | A1   | 20011031 | EP 99906830   | A    | 19990203 | 200172   |
|               |      |          | WO 99US2755   | A    | 19990203 |          |
| JP 2002537008 | W    | 20021105 | WO 99US2755   | A    | 19990203 | 200304   |
|               |      |          | JP 2000597702 | A    | 19990203 |          |
| DE 19983999   | T    | 20030618 | DE 1083999    | A    | 19990203 | 200348   |
|               |      |          | WO 99US2755   | A    | 19990203 |          |

Priority Applications (No Type Date): WO 99US2755 A 19990203

Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
|-----------|------|-----|----|----------|--------------|
|-----------|------|-----|----|----------|--------------|

|              |    |   |    |             |  |
|--------------|----|---|----|-------------|--|
| WO 200046689 | A1 | E | 46 | G06F-017/00 |  |
|--------------|----|---|----|-------------|--|

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

|            |   |  |  |                              |
|------------|---|--|--|------------------------------|
| AU 9926652 | A |  |  | Based on patent WO 200046689 |
|------------|---|--|--|------------------------------|

|            |    |   |             |                              |
|------------|----|---|-------------|------------------------------|
| EP 1149347 | A1 | E | G06F-017/00 | Based on patent WO 200046689 |
|------------|----|---|-------------|------------------------------|

Designated States (Regional): BE CH DK ES FR GB IE IT LI NL SE

|               |   |    |             |                              |
|---------------|---|----|-------------|------------------------------|
| JP 2002537008 | W | 54 | A61B-005/05 | Based on patent WO 200046689 |
|---------------|---|----|-------------|------------------------------|

|             |   |  |             |                              |
|-------------|---|--|-------------|------------------------------|
| DE 19983999 | T |  | G06F-017/00 | Based on patent WO 200046689 |
|-------------|---|--|-------------|------------------------------|

18/3/10 (Item 8 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

013507822

WPI Acc No: 2000-679766/200066

XRAM Acc No: C00-206838

John Sims EIC 3700 308-4836

**Detecting the effectiveness of sterilization treatment, useful for assessing sterilization of equipment such as medical devices, comprises biological indicator e.g. bacterial spore and multiangle light scattering instrument**

Patent Assignee: ICF TECHNOLOGIES INC (ICFT-N)

Inventor: FELKNER I C; LAICO J P

Number of Countries: 093 Number of Patents: 007

Patent Family:

| Patent No      | Kind | Date     | Applicat No    | Kind | Date     | Week     |
|----------------|------|----------|----------------|------|----------|----------|
| WO 200066763   | A1   | 20001109 | WO 2000US11914 | A    | 20000503 | 200066 B |
| AU 200046911   | A    | 20001117 | AU 200046911   | A    | 20000503 | 200111   |
| EP 1173604     | A1   | 20020123 | EP 2000928717  | A    | 20000503 | 200214   |
|                |      |          | WO 2000US11914 | A    | 20000503 |          |
| BR 200010297   | A    | 20020213 | BR 200010297   | A    | 20000503 | 200220   |
|                |      |          | WO 2000US11914 | A    | 20000503 |          |
| US 20020123089 | A1   | 20020905 | US 99132186    | P    | 19990503 | 200260   |
|                |      |          | US 2000563707  | A    | 20000502 |          |
|                |      |          | US 200116742   | A    | 20011031 |          |
| JP 2002542836  | W    | 20021217 | JP 2000615785  | A    | 20000503 | 200312   |
|                |      |          | WO 2000US11914 | A    | 20000503 |          |
| US 20030027242 | A1   | 20030206 | US 99132186    | P    | 19990503 | 200313   |
|                |      |          | US 2000563707  | A    | 20000502 |          |
|                |      |          | US 200291260   | A    | 20020304 |          |

Priority Applications (No Type Date): US 99132186 P 19990503; US 2000563707 A 20000502; US 200116742 A 20011031; US 200291260 A 20020304

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200066763 A1 E 81 C12Q-001/22

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ TZ UG ZW

AU 200046911 A C12Q-001/22 Based on patent WO 200066763

EP 1173604 A1 E C12Q-001/22 Based on patent WO 200066763

Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI

BR 200010297 A C12Q-001/22 Based on patent WO 200066763

US 20020123089 A1 C12Q-001/22 Provisional application US 99132186

Div ex application US 2000563707

JP 2002542836 W 82 C12M-001/34 Based on patent WO 200066763

US 20030027242 A1 C12Q-001/22 Provisional application US 99132186

CIP of application US 2000563707

18/3/11 (Item 9 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

013099332

WPI Acc No: 2000-271204/200023

Related WPI Acc No: 2000-271595

XRAM Acc No: C00-082714

**Computer-implemented method for predicting a pharmacokinetic property of a target compound in an anatomical segment of a target mammalian system**

Patent Assignee: NAVICYTE INC (NAVI-N); GRASS G M (GRAS-I); LEESMAN G D

(LEES-I); NORRIS D A (NORR-I); SINKO P J (SINK-I); WEHRLI J E (WEHR-I);

John Sims EIC 3700 308-4836

LION BIOSCIENCE AG (LION-N)

Inventor: GRASS G M; LEESMAN G D; NORRIS D A; SINKO P J; WEHRLI J E

Number of Countries: 023 Number of Patents: 009

Patent Family:

| Patent No      | Kind | Date     | Applicat No   | Kind | Date     | Week     |
|----------------|------|----------|---------------|------|----------|----------|
| WO 200015178   | A2   | 20000323 | WO 99US21001  | A    | 19990914 | 200023 B |
| AU 9962474     | A    | 20000403 | AU 9962474    | A    | 19990914 | 200034   |
| EP 1144675     | A2   | 20011017 | EP 99949642   | A    | 19990914 | 200169   |
|                |      |          | WO 99US21001  | A    | 19990914 |          |
| US 20020010550 | A1   | 20020124 | US 98100224   | P    | 19980914 | 200210   |
|                |      |          | US 98100290   | P    | 19980914 |          |
|                |      |          | US 98109232   | P    | 19981118 |          |
|                |      |          | US 98109234   | P    | 19981118 |          |
|                |      |          | US 99320544   | A    | 19990526 |          |
| US 20020013662 | A1   | 20020131 | US 98100224   | P    | 19980914 | 200210   |
|                |      |          | US 98100290   | P    | 19980914 |          |
|                |      |          | US 98109232   | P    | 19981118 |          |
|                |      |          | US 98109234   | P    | 19981118 |          |
|                |      |          | US 99320371   | A    | 19990526 |          |
| US 20020035459 | A1   | 20020321 | US 98100224   | P    | 19980914 | 200224   |
|                |      |          | US 98100290   | P    | 19980914 |          |
|                |      |          | US 98109232   | P    | 19981118 |          |
|                |      |          | US 98109234   | P    | 19981118 |          |
|                |      |          | US 99320270   | A    | 19990526 |          |
| US 20020061540 | A1   | 20020523 | US 98100224   | P    | 19980914 | 200239   |
|                |      |          | US 98100290   | P    | 19980914 |          |
|                |      |          | US 98109232   | P    | 19981118 |          |
|                |      |          | US 98109234   | P    | 19981118 |          |
|                |      |          | US 99320069   | A    | 19990526 |          |
|                |      |          | US 2001989533 | A    | 20011121 |          |
| JP 2002524809  | W    | 20020806 | WO 99US21001  | A    | 19990914 | 200266   |
|                |      |          | JP 2000569763 | A    | 19990914 |          |
| US 6542858     | B1   | 20030401 | US 98100224   | P    | 19980914 | 200324   |
|                |      |          | US 98100290   | P    | 19980914 |          |
|                |      |          | US 98109232   | P    | 19981118 |          |
|                |      |          | US 98109234   | P    | 19981118 |          |
|                |      |          | US 99320545   | A    | 19990526 |          |

Priority Applications (No Type Date): US 99320545 A 19990526; US 98100224 P 19980914; US 98100290 P 19980914; US 98109232 P 19981118; US 98109234 P 19981118; US 99320069 A 19990526; US 99320270 A 19990526; US 99320371 A 19990526; US 99320372 A 19990526; US 99320544 A 19990526; US 2001989533 A 20011121

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200015178 A2 E 207 A61K-000/00

Designated States (National): AU CA JP US

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

AU 9962474 A Based on patent WO 200015178

EP 1144675 A2 E C12Q-001/00 Based on patent WO 200015178

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

US 20020010550 A1 G01N-033/48 Provisional application US 98100224

Provisional application US 98100290

Provisional application US 98109232

Provisional application US 98109234

US 20020013662 A1 G01N-033/48 Provisional application US 98100224

Provisional application US 98100290

US 20020035459 A1 G01N-033/48 Provisional application US 98109232  
Provisional application US 98109234  
Provisional application US 98100224

US 20020061540 A1 C12Q-001/00 Provisional application US 98100290  
Provisional application US 98109232  
Provisional application US 98109234  
Provisional application US 98100224

JP 2002524809 W 223 G06F-019/00 Provisional application US 98100290  
Based on patent WO 200015178  
US 6542858 B1 G06N-003/00 Provisional application US 98109232  
Provisional application US 98100290  
Provisional application US 98109232  
Provisional application US 98109234

18/3/12 (Item 10 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2003 Thomson Derwent. All rts. reserv.

012925573 \*\*Image available\*\*  
WPI Acc No: 2000-097409/200008  
XRPX Acc No: N00-075271

**Communication network modeling method for telephone network, computer network used in business organization, medical application**  
Patent Assignee: CAMELOT INFORMATION TECHNOLOGIES LTD (CAME-N)  
Inventor: BAHRAV Y; SHAPIRA Y  
Number of Countries: 087 Number of Patents: 003  
Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| WO 9963708 | A2   | 19991209 | WO 99IL291  | A    | 19990601 | 200008 B |
| AU 9940570 | A    | 19991220 | AU 9940570  | A    | 19990601 | 200021   |
| EP 1084550 | A2   | 20010321 | EP 99923843 | A    | 19990601 | 200117   |
|            |      |          | WO 99IL291  | A    | 19990601 |          |

Priority Applications (No Type Date): IL 124706 A 19980601  
Patent Details:

| Patent No  | Kind | Lan | Pg | Main IPC    | Filing Notes               |
|--|------|-----|----|-------------|----------------------------|
| WO 9963708   | A2   | E   | 31 | H04L-012/00 |                            |
| Designated States (National): AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW |      |     |    |             |                            |
| Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW  |      |     |    |             |                            |
| AU 9940570   | A    |     |    | H04L-012/00 | Based on patent WO 9963708 |
| EP 1084550   | A2   | E   |    | H04L-012/24 | Based on patent WO 9963708 |
| Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE   |      |     |    |             |                            |

18/3/13 (Item 11 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2003 Thomson Derwent. All rts. reserv.

011869598 \*\*Image available\*\*  
WPI Acc No: 1998-286508/199825

XRPX Acc No: N98-225210

**Method of determining end systolic pressure volume relationship of human heart - involves monitoring heart for blood pressure of its left ventricular to give pressure signal, with volume to give volume signal and analysing ECG timing signals based on previous determined model normalised elastance function**

Patent Assignee: UNIV JOHNS HOPKINS (UYJO ); UNIV JOHNS HOPKINS SCHOOL MEDICINE (UYJO )

Inventor: CHEN C; KASS D A; SENZAKI H

Number of Countries: 079 Number of Patents: 003

Patent Family:

| Patent No  | Kind | Date     | Applicat No  | Kind | Date     | Week     |
|------------|------|----------|--------------|------|----------|----------|
| WO 9819594 | A1   | 19980514 | WO 97US19695 | A    | 19971103 | 199825 B |
| AU 9854270 | A    | 19980529 | AU 9854270   | A    | 19971103 | 199841   |
| US 6090047 | A    | 20000718 | US 9630184   | A    | 19961104 | 200037   |
|            |      |          | US 97962847  | A    | 19971103 |          |

Priority Applications (No Type Date): US 9630184 P 19961104; US 97962847 A 19971103

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9819594 A1 E 38 A61B-005/02

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW

Designated States (Regional): AT BE CH DE DK EA ES FI FR GB GH GR IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

AU 9854270 A A61B-005/02 Based on patent WO 9819594

US 6090047 A A61N-005/00 Provisional application US 9630184

18/3/14 (Item 12 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

011614415

WPI Acc No: 1998-031543/199803

XRPX Acc No: N98-025415

**Interactive cardiac rhythm simulator for simulating activity of heart - comprises heart model composed of processor controlled state machines to provide electrogram artifact signals and signal processor for composing electrogram waveform from electrogram artifact signals**

Patent Assignee: PACESETTER INC (PACE-N)

Inventor: GLASSEL P R; MILLER M D

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| US 5692907 | A    | 19971202 | US 95515553 | A    | 19950816 | 199803 B |

Priority Applications (No Type Date): US 95515553 A 19950816

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

US 5692907 A G09B-023/28

18/3/15 (Item 13 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

008285551      \*\*Image available\*\*

WPI Acc No: 1990-172552/199023

XRPX Acc No: N90-134196

**Computer analysis to determine heart size in chest radiography - has polynomial fitting process to determine heart contour and size**

Patent Assignee: ARCH DEVELOPMENT CO (ARCH-N); UNIV CHICAGO (UYCH-N)

Inventor: DOI K; NAKAMORI N

Number of Countries: 002    Number of Patents: 002

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| DE 3938699 | A    | 19900531 | DE 3938699  | A    | 19891118 | 199023 B |
| US 5072384 | A    | 19911210 | US 88275720 | A    | 19881123 | 199201   |

Priority Applications (No Type Date): US 88275720 A 19881123

**18/3/16      (Item 14 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

007744076

WPI Acc No: 1989-009188/198902

**Method of controlling work stations in an automated factory - uses local area network to which is connected work stations using OSI model of ISO norm.**

Patent Assignee: BULL SA (SELA )

Inventor: GIMZA J; GIMZA J L

Number of Countries: 005    Number of Patents: 007

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| EP 297964  | A    | 19890104 | EP 88401627 | A    | 19880627 | 198902 B |
| FR 2617623 | A    | 19890106 |             |      |          | 198909   |
| JP 1026954 | A    | 19890130 | JP 88164797 | A    | 19880701 | 198910   |
| EP 297964  | B1   | 19940810 | EP 88401627 | A    | 19880627 | 199431   |
| DE 3851017 | G    | 19940915 | DE 3851017  | A    | 19880627 | 199436   |
|            |      |          | EP 88401627 | A    | 19880627 |          |
| ES 2061704 | T3   | 19941216 | EP 88401627 | A    | 19880627 | 199505   |
| US 5530857 | A    | 19960625 | US 88214065 | A    | 19880630 | 199631   |
|            |      |          | US 91666568 | A    | 19910308 |          |
|            |      |          | US 94281988 | A    | 19940729 |          |

Priority Applications (No Type Date): FR 879382 A 19870702

Patent Details:

| Patent No  | Kind | Lan | Pg | Main IPC    | Filing Notes                    |
|------------|------|-----|----|-------------|---------------------------------|
| EP 297964  | A    | F   | 21 |             |                                 |
| EP 297964  | B1   | F   | 17 | G06F-013/38 |                                 |
| DE 3851017 | G    |     |    | G06F-013/38 | Based on patent EP 297964       |
| ES 2061704 | T3   |     |    | G06F-013/38 | Based on patent EP 297964       |
| US 5530857 | A    |     | 13 | G06F-015/16 | Cont of application US 88214065 |
|            |      |     |    |             | Cont of application US 91666568 |

**18/3/17      (Item 15 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

007507219      \*\*Image available\*\*

WPI Acc No: 1988-141152/198821

XRPX Acc No: N88-107766

**Human testing system for cardio-pulmonary resuscitation - has model of human body which is provided with simulated resuscitation**

Patent Assignee: LAERDAL A S A/S (LAER-N); LAERDAL A S A/S (LAER-I)  
Inventor: AAMODTH K; EIKELAND H; LAERDAL T  
Number of Countries: 002 Number of Patents: 003  
Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| DE 3638192 | A    | 19880519 | DE 3638192  | A    | 19861108 | 198821 B |
| US 4797104 | A    | 19890110 | US 8781317  | A    | 19870803 | 198905   |
| DE 3638192 | C    | 19900927 |             |      |          | 199039   |

Priority Applications (No Type Date): DE 3638192 A 19861108

Patent Details:

| Patent No  | Kind | Lan Pg | Main IPC | Filing Notes |
|------------|------|--------|----------|--------------|
| DE 3638192 | A    | 18     |          |              |
| US 4797104 | A    | 15     |          |              |

**18/3/18 (Item 16 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

007394572 \*\*Image available\*\*

WPI Acc No: 1988-028507/198804

XRAM Acc No: C88-012609

XRPX Acc No: N88-021512

**A fully automated haemodialysis system - is based on patient blood pressure and heart rate and uses a microprocessor to control filtration rate and electrolyte concentration**

Patent Assignee: FORD H HOSPITAL (FORD-N)

Inventor: LIPPS B J

Number of Countries: 001 Number of Patents: 001

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| US 4718891 | A    | 19880112 | US 86860083 | A    | 19860506 | 198804 B |

Priority Applications (No Type Date): US 84606707 A 19840503; US 86860083 A 19860506

Patent Details:

| Patent No  | Kind | Lan Pg | Main IPC | Filing Notes |
|------------|------|--------|----------|--------------|
| US 4718891 | A    | 5      |          |              |

**18/3/19 (Item 17 from file: 350)**

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

007109538

WPI Acc No: 1987-109535/198716

XRPX Acc No: N87-082403

**ECG valve representation derived using electrodes - feeds to computer for computing coordinates describing excitation spread which as processed contour lines are fed to heart model**

Patent Assignee: KESSLER M (KESS-I)

Inventor: KESSLER M

Number of Countries: 010 Number of Patents: 005

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| DE 3536658 | A    | 19870416 | DE 3536658  | A    | 19851015 | 198716 B |
| EP 223049  | A    | 19870527 | EP 86114059 | A    | 19861010 | 198721   |
| US 4898181 | A    | 19900206 | US 88262107 | A    | 19881019 | 199012   |
| EP 223049  | B1   | 19931229 | EP 86114059 | A    | 19861010 | 199401   |
| DE 3689469 | G    | 19940210 | DE 3689469  | A    | 19861010 | 199407   |

John Sims EIC 3700 308-4836



EP 86114059 A 19861010

Priority Applications (No Type Date): DE 3536658 A 19851015

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

DE 3536658 A 11

EP 223049 A G

Designated States (Regional): AT CH DE FR GB IT LI NL SE

US 4898181 A 12

EP 223049 B1 G 14 A61B-005/04

Designated States (Regional): AT CH DE FR GB IT LI NL SE

DE 3689469 G A61B-005/04 Based on patent EP 223049

18/3/20 (Item 18 from file: 350)

DIALOG(R)File 350:Derwent WPIX

(c) 2003 Thomson Derwent. All rts. reserv.

001453822

WPI Acc No: 1976-B6714X/197608

**Automatic identification of picture object with model - comparing matrix  
obtained from scanning with model matrix in computer**

Patent Assignee: PHILIPS PATENTVERWALTUNG GMBH (PHIG )

Number of Countries: 006 Number of Patents: 007

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date | Week     |
|------------|------|----------|-------------|------|------|----------|
| DE 2437250 | A    | 19760212 |             |      |      | 197608 B |
| BE 832008  | A    | 19760202 |             |      |      | 197608   |
| NL 7508954 | A    | 19760204 |             |      |      | 197608   |
| SE 7508617 | A    | 19760301 |             |      |      | 197613   |
| FR 2280937 | A    | 19760402 |             |      |      | 197621   |
| DE 2437250 | B    | 19780105 |             |      |      | 197802   |
| GB 1525856 | A    | 19780920 |             |      |      | 197838   |

Priority Applications (No Type Date): DE 2437250 A 19740802

?

23/TI/6 (Item 5 from file: 350)  
DIALOG(R)File 350:(c) 2003 Thomson Derwent. All rts. reserv.

Surgical instrument manipulating arm and computer control system -  
uses three-dimensional data model in computer to assist in  
reconciliation of previous surgery and bone transplants  
? t s23/3/all

23/3/1 (Item 1 from file: 347)  
DIALOG(R)File 347:JAPIO  
(c) 2003 JPO & JAPIO. All rts. reserv.

06227788 \*\*Image available\*\*  
REAL-TIME POSITIONING SYSTEM

PUB. NO.: 11-169351 [JP 11169351 A]  
PUBLISHED: June 29, 1999 (19990629)  
INVENTOR(s): VOMLEHN JOHN CHRISTIAN  
CARL ALLEN LAWRENCE  
KHANUJA HARPAL SINGH  
APPLICANT(s): GENERAL ELECTRIC CO <GE>  
APPL. NO.: 10-269110 [JP 98269110]  
FILED: September 24, 1998 (19980924)  
PRIORITY: 944277 [US 944277], US (United States of America), October  
06, 1997 (19971006)

23/3/2 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2003 Thomson Derwent. All rts. reserv.

015195797  
WPI Acc No: 2003-256333/200325  
XRAM Acc No: C03-066382  
XRPX Acc No: N03-203406

Combination of peptides derived from chemotaxis inhibiting protein from  
Staphylococcus aureus (CHIPS) having CHIPS activity, useful in  
prophylaxis and treatment of inflammation, cardiovascular, skin and  
kidney diseases

Patent Assignee: JARI PHARM BV (JARI-N)  
Inventor: GOSSELAAR-DE HAAS C J C; KRUIJTZER J A W; VAN KESSEL C P M; VAN  
STRIJP J A G

Number of Countries: 096 Number of Patents: 001

Patent Family:

| Patent No    | Kind | Date     | Applicat No   | Kind | Date     | Week     |
|--------------|------|----------|---------------|------|----------|----------|
| WO 200306048 | A1   | 20030123 | WO 2001EP8004 | A    | 20010711 | 200325 B |

Priority Applications (No Type Date): WO 2001EP8004 A 20010711

Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
|-----------|------|-----|----|----------|--------------|
|-----------|------|-----|----|----------|--------------|

|              |    |   |    |             |  |
|--------------|----|---|----|-------------|--|
| WO 200306048 | A1 | E | 89 | A61K-038/08 |  |
|--------------|----|---|----|-------------|--|

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA  
CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN  
IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ  
PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW  
Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

23/3/3 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX  
(c) 2003 Thomson Derwent. All rts. reserv.

012881563    \*\*Image available\*\*  
WPI Acc No: 2000-053397/200004  
XRPX Acc No: N00-041564

**Interactive computer-assisted surgical system with three-dimensional model display controller**

Patent Assignee: ORTHOSOFT INC (ORTH-N)  
Inventor: BOIVIN M; BROSSEAU E; HAMEL G; AMIOT L  
Number of Countries: 023    Number of Patents: 005  
Patent Family:

| Patent No  | Kind | Date     | Applicat No   | Kind | Date     | Week     |
|------------|------|----------|---------------|------|----------|----------|
| WO 9960939 | A1   | 19991202 | WO 99CA495    | A    | 19990527 | 200004 B |
| AU 9939245 | A    | 19991213 | AU 9939245    | A    | 19990527 | 200020   |
| EP 1079756 | A1   | 20010307 | EP 99922027   | A    | 19990527 | 200114   |
|            |      |          | WO 99CA495    | A    | 19990527 |          |
| US 6450978 | B1   | 20020917 | US 9887089    | P    | 19980528 | 200264   |
|            |      |          | US 9887091    | P    | 19980528 |          |
|            |      |          | US 99322398   | A    | 19990528 |          |
| US 6533737 | B1   | 20030318 | US 9887089    | P    | 19980528 | 200322   |
|            |      |          | US 9887091    | P    | 19980528 |          |
|            |      |          | US 99322398   | A    | 19990528 |          |
|            |      |          | US 2000641878 | A    | 20000817 |          |

Priority Applications (No Type Date): US 9887091 P 19980528; US 9887089 P 19980528; US 99322398 A 19990528; US 2000641878 A 20000817

**Patent Details:**

| Patent No  | Kind | Lan Pg | Main IPC   | Filing Notes   |
|------------|------|--------|--|--|
| WO 9960939 | A1 E | 35     | A61B-019/00  |  |
|            |      |        | Designated States (National): AU CA JP   |  |
|            |      |        | Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE    |  |
| AU 9939245 | A    |        | A61B-019/00  | Based on patent WO 9960939   |
| EP 1079756 | A1 E |        | A61B-019/00  | Based on patent WO 9960939   |
|            |      |        | Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE |  |
| US 6450978 | B1   |        | A61B-005/00  | Provisional application US 9887089<br>Provisional application US 9887091                                   |
| US 6533737 | B1   |        | A61B-005/00  | Provisional application US 9887089<br>Provisional application US 9887091<br>Div ex application US 99322398 |

**23/3/4    (Item 3 from file: 350)**

DIALOG(R)File 350:Derwent WPIX  
(c) 2003 Thomson Derwent. All rts. reserv.

012439877    \*\*Image available\*\*  
WPI Acc No: 1999-245985/199921  
XRPX Acc No: N99-183198

**Computer-constructed surgical guide**

Patent Assignee: GENERAL ELECTRIC CO (GENE )  
Inventor: CARL A L; VOMLEHN J C; VOSBURGH K G  
Number of Countries: 026    Number of Patents: 002  
Patent Family:

| Patent No   | Kind | Date     | Applicat No | Kind | Date     | Week     |
|-------------|------|----------|-------------|------|----------|----------|
| EP 908836   | A2   | 19990414 | EP 98308141 | A    | 19981006 | 199921 B |
| JP 11178837 | A    | 19990706 | JP 98279230 | A    | 19981001 | 199937   |

Priority Applications (No Type Date): US 97944275 A 19971006

John Sims    EIC 3700    308-4836

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
EP 908836 A2 E 6 G06F-019/00  
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT  
LI LT LU LV MC MK NL PT RO SE SI  
JP 11178837 A 5 A61B-017/58

23/3/5 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX  
(c) 2003 Thomson Derwent. All rts. reserv.

012439821 \*\*Image available\*\*

WPI Acc No: 1999-245929/199921

XRPX Acc No: N99-183151

**Interactive real-time, optimum positioning system for surgical instrument insertion**

Patent Assignee: GENERAL ELECTRIC CO (GENE )

Inventor: CARL A L; KHANUJA H S; VOMLEHN J C

Number of Countries: 027 Number of Patents: 003

Patent Family:

| Patent No   | Kind | Date     | Applicat No | Kind | Date     | Week     |
|-------------|------|----------|-------------|------|----------|----------|
| EP 908146   | A2   | 19990414 | EP 98308131 | A    | 19981006 | 199921 B |
| JP 11169351 | A    | 19990629 | JP 98269110 | A    | 19980924 | 199936   |
| US 5978696  | A    | 19991102 | US 97944277 | A    | 19971006 | 199953   |

Priority Applications (No Type Date): US 97944277 A 19971006

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes  
EP 908146 A2 E 6 A61B-017/17  
Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT  
LI LT LU LV MC MK NL PT RO SE SI  
JP 11169351 A 6 A61B-005/00  
US 5978696 A A61B-005/00

23/3/6 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX  
(c) 2003 Thomson Derwent. All rts. reserv.

009988419 \*\*Image available\*\*

WPI Acc No: 1994-256130/199432

XRPX Acc No: N94-201804

**Surgical instrument manipulating arm and computer control system -  
uses three-dimensional data model in computer to assist in  
reconciliation of previous surgery and bone transplants**

Patent Assignee: MDC MEDICAL DIAGNOSTIC COMPUTING GMBH (MDCM-N); KLIEGIS U  
(KLIE-I); KLIEGIS U G (KLIE-I)

Inventor: KLIEGIS U G; KLIEGIS U

Number of Countries: 019 Number of Patents: 007

Patent Family:

| Patent No  | Kind | Date     | Applicat No | Kind | Date     | Week     |
|------------|------|----------|-------------|------|----------|----------|
| DE 4304570 | A1   | 19940818 | DE 4304570  | A    | 19930216 | 199432 B |
| WO 9418899 | A1   | 19940901 | WO 94DE156  | A    | 19940215 | 199436   |
| EP 684795  | A1   | 19951206 | EP 94906872 | A    | 19940215 | 199602   |
|            |      |          | WO 94DE156  | A    | 19940215 |          |
| JP 8508656 | W    | 19960917 | JP 94518545 | A    | 19940215 | 199704   |
|            |      |          | WO 94DE156  | A    | 19940215 |          |
| US 5769078 | A    | 19980623 | WO 94DE156  | A    | 19940215 | 199832   |
|            |      |          | US 95501045 | A    | 19950816 |          |
| EP 684795  | B1   | 20000105 | EP 94906872 | A    | 19940215 | 200006   |

|             |   |          |             |   |          |        |
|-------------|---|----------|-------------|---|----------|--------|
|             |   |          | WO 94DE156  | A | 19940215 |        |
| DE 59409615 | G | 20010125 | DE 509615   | A | 19940215 | 200107 |
|             |   |          | EP 94906872 | A | 19940215 |        |
|             |   |          | WO 94DE156  | A | 19940215 |        |

Priority Applications (No Type Date): DE 4304570 A 19930216

Patent Details:

| Patent No | Kind | Lan | Pg | Main IPC | Filing Notes |
|-----------|------|-----|----|----------|--------------|
|-----------|------|-----|----|----------|--------------|

|            |    |  |   |             |  |
|------------|----|--|---|-------------|--|
| DE 4304570 | A1 |  | 5 | A61B-019/00 |  |
|------------|----|--|---|-------------|--|

|            |    |   |    |             |  |
|------------|----|---|----|-------------|--|
| WO 9418899 | A1 | G | 16 | A61B-019/00 |  |
|------------|----|---|----|-------------|--|

Designated States (National): JP US

Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

|           |    |   |   |             |                            |
|-----------|----|---|---|-------------|----------------------------|
| EP 684795 | A1 | G | 5 | A61B-019/00 | Based on patent WO 9418899 |
|-----------|----|---|---|-------------|----------------------------|

Designated States (Regional): AT BE CH DE DK ES FR GB GR IE IT LI LU MC NL PT SE

|            |   |  |    |             |                            |
|------------|---|--|----|-------------|----------------------------|
| JP 8508656 | W |  | 13 | A61B-019/00 | Based on patent WO 9418899 |
|------------|---|--|----|-------------|----------------------------|

|            |   |  |  |             |                            |
|------------|---|--|--|-------------|----------------------------|
| US 5769078 | A |  |  | A61B-017/00 | Based on patent WO 9418899 |
|------------|---|--|--|-------------|----------------------------|

|           |    |   |  |             |                            |
|-----------|----|---|--|-------------|----------------------------|
| EP 684795 | B1 | G |  | A61B-019/00 | Based on patent WO 9418899 |
|-----------|----|---|--|-------------|----------------------------|

Designated States (Regional): CH DE FR GB LI

|             |   |  |  |             |                           |
|-------------|---|--|--|-------------|---------------------------|
| DE 59409615 | G |  |  | A61B-019/00 | Based on patent EP 684795 |
|-------------|---|--|--|-------------|---------------------------|

Based on patent WO 9418899

?

13/3/1

DIALOG(R) File 348:EUROPEAN PATENTS

(c) 2003 European Patent Office. All rts. reserv.

01129401

**INTERVENTIONAL RADIOLOGY INTERFACE APPARATUS AND METHOD**

**DISPOSITIF D'INTERFACE EN RADIOLOGIE EXPLORATRICE ET PROCEDE**

PATENT ASSIGNEE:

HT Medical Systems, Inc., (2686170), Suite 902, 6001 Montrose Road,  
Rockville, MD 20852, (US), (Applicant designated States: all)

INVENTOR:

MEGLAN, Dwight, A., 6 Hutchins Circle, Lynnfield, MA 01940, (US)

FELDMAN, Philip, G. , 5520 Heatherwood Road, Baltimore, MD 21227, (US)

MERRIL, Gregory, L. , 4822 Leland Street, Chevy Chase, MD 20815, (US)

PATENT (CC, No, Kind, Date):

WO 9810387 980312

APPLICATION (CC, No, Date): WO 97940798 970904; WO 97US15552 970904

PRIORITY (CC, No, Date): US 25433 P 960904

DESIGNATED STATES: AT; BE; CH; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI; LU;  
MC; NL; PT; SE

INTERNATIONAL PATENT CLASS: G08B-001/00

LANGUAGE (Publication,Procedural,Application): English; English; English

13/3/2

DIALOG(R) File 348:EUROPEAN PATENTS

(c) 2003 European Patent Office. All rts. reserv.

01077797

**INTERFACE DEVICE AND METHOD FOR INTERFACING INSTRUMENTS TO VASCULAR ACCESS  
SIMULATION SYSTEMS**

**SCHNITTSTELLE FUR SIMULATOR FUR VASKULARE VORRICHTUNG**

**DISPOSITIF ET PROCEDE D'INTERFA AGE D'INSTRUMENTS AVEC DES SYSTEMES DE  
SIMULATION D'ACCES VASCULAIRE**

PATENT ASSIGNEE:

HT Medical Systems, Inc., (2686170), Suite 902, 6001 Montrose Road,  
Rockville, MD 20852, (US), (Applicant designated States: all)

INVENTOR:

CUNNINGHAM, Richard, L. , 630B South 15th Street, Arlington, VA 22202,  
(US)

FELDMAN, Philip , 5520 Heatherwood Road, Baltimore, MD 21227, (US)

FELDMAN, Ben, 1632 Great Falls Street, McLean, VA 22101, (US)

MERRIL, Gregory, L. , 4822 Leland Street, Chevy Chase, MD 20815, (US)

LEGAL REPRESENTATIVE:

Haley, Stephen (79721), Gill Jennings & Every, Broadgate House, 7 Eldon  
Street, London EC2M 7LH, (GB)

PATENT (CC, No, Kind, Date): EP 1051698 A2 001115 (Basic)

WO 9939315 990805

APPLICATION (CC, No, Date): EP 99904380 990128; WO 99US1822 990128

PRIORITY (CC, No, Date): US 72809 980128

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;  
LU; MC; NL; PT; SE

INTERNATIONAL PATENT CLASS: G09B-023/28

NOTE:

No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English

13/3/3

DIALOG(R) File 348:EUROPEAN PATENTS

(c) 2003 European Patent Office. All rts. reserv.

01077468

**INTERFACE DEVICE AND METHOD FOR INTERFACING INSTRUMENTS TO MEDICAL  
PROCEDURE SIMULATION SYSTEM**

**INSTRUMENTENSCHNITTSTELLE UND SIMULATIONSMETHODE FUR MEDIZINISCHE VERFAHREN  
PROCEDE ET DISPOSITIF D'INTERFACE ENTRE DES INSTRUMENTS ET UN SYSTEME DE  
SIMULATION DE PROCEDURE MEDICALE**

PATENT ASSIGNEE:

HT Medical Systems, Inc., (2686171), 55 W. Watkins Mill Road,  
Gaithersburg, MD 20878, (US), (Applicant designated States: all)

INVENTOR:

ALEXANDER, David, 15938 Woodgrove Road, Purcellville, VA 20132, (US)  
**BROWN, J., Michael**, 1759-1/2 R Street, N.W. 200, Washington, DC 20009,  
(US)

CABAHUG, Eric, 12491 Lucas Drive, Fairfax, VA 22033, (US)

CHURCHILL, Philip, J., 17229 Emerson Drive, Silver Spring, MD 20905, (US)

COHEN, Robert, F., 3827 Gateway Terrace, Burtonsville, MD 20886, (US)

**CUNNINGHAM, Richard, L.**, 630B South 15th Street, Arlington, VA 22202,  
(US)

FELDMAN, Ben, 1632 Great Falls Street, McLean, VA 22101, (US)

FONTAYNE, Diego, 1 Diamond Court, Montebello, NY 10901, (US)

**MERRIL, Gregory, L.**, 4822 Leland Street, Chevy Chase, MD 20815, (US)

TURCHI, Mario, 275 Leonia Avenue, Leonia, NJ 07605, (US)

LEGAL REPRESENTATIVE:

Haley, Stephen (79721), Gill Jennings & Every, Broadgate House, 7 Eldon  
Street, London EC2M 7LH, (GB)

PATENT (CC, No, Kind, Date): EP 1103041 A1 010530 (Basic)

WO 9939317 990805

APPLICATION (CC, No, Date): EP 99902444 990127; WO 99US1664 990127

PRIORITY (CC, No, Date): US 72672 P 980128; US 105661 P 981026; US 116545 P  
990121

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;  
LU; MC; NL; PT; SE

INTERNATIONAL PATENT CLASS: G09B-023/28

NOTE:

No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; English  
?

19/3/2

DIALOG(R)File 348:EUROPEAN PATENTS

(c) 2003 European Patent Office. All rts. reserv.

01011184

**Computer-constructed surgical guide**

**Rechner-konstruierte chirurgisches Lehre**

**Guide chirurgical construit par ordinateur**

PATENT ASSIGNEE:

GENERAL ELECTRIC COMPANY, (203903), 1 River Road, Schenectady, NY 12345,

(US), (Applicant designated States: all)

INVENTOR:

Vomlehn, John Christian, 218 Spring Road, Scotia, New York 12302, (US)

Vosburgh, Kirby Gannett, 900 Saint Davids Lane, Schenectady, New York  
12309, (US)

Carl, Allen Lawrence, 308 Highgate Drive, Slingerlands, New York 12159,  
(US)

LEGAL REPRESENTATIVE:

Goode, Ian Roy (31098), London Patent Operation General Electric

International, Inc. Essex House 12-13 Essex Street, London WC2R 3AA,  
(GB)

PATENT (CC, No, Kind, Date): EP 908836 A2 990414 (Basic)

EP 908836 A3 991201

APPLICATION (CC, No, Date): EP 98308141 981006;

PRIORITY (CC, No, Date): US 944275 971006

DESIGNATED STATES: DE; NL

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: G06F-019/00; A61B-017/17

ABSTRACT WORD COUNT: 205

NOTE:

Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text | Language | Update | Word Count |
|----------------|----------|--------|------------|
|----------------|----------|--------|------------|

|          |           |      |     |
|----------|-----------|------|-----|
| CLAIMS A | (English) | 9915 | 456 |
|----------|-----------|------|-----|

|        |           |      |      |
|--------|-----------|------|------|
| SPEC A | (English) | 9915 | 1666 |
|--------|-----------|------|------|

|                               |      |
|-------------------------------|------|
| Total word count - document A | 2122 |
|-------------------------------|------|

|                               |   |
|-------------------------------|---|
| Total word count - document B | 0 |
|-------------------------------|---|

|                                    |      |
|------------------------------------|------|
| Total word count - documents A + B | 2122 |
|------------------------------------|------|

19/3/5

DIALOG(R)File 348:EUROPEAN PATENTS

(c) 2003 European Patent Office. All rts. reserv.

00581164

**SURGICAL OPERATION DEVICE**

**CHIRURGISCHE OPERATIONSVORRICHTUNG**

**DISPOSITIF POUR INTERVENTIONS CHIRURGICALES**

PATENT ASSIGNEE:

ONESYS OY, (1742580), Kiviharjuntie 11, 90220 Oulu, (FI), (applicant  
designated states: DE;FR;GB)

INVENTOR:

ONESYS OY, Kiviharjuntie 11, 90220 Oulu, (FI)

LEGAL REPRESENTATIVE:

Silverman, Warren et al (35861), Haseltine Lake & Co. Imperial House,  
15-19 Kingsway, London WC2B 6UD, (GB)

PATENT (CC, No, Kind, Date): EP 586464 A1 940316 (Basic)

EP 586464 B1 980812

WO 9220295 921126

John Sims EIC 3700 308-4836



APPLICATION (CC, No, Date): EP 92910792 920522; WO 92FI162 920522

PRIORITY (CC, No, Date): FI 912520 910524

DESIGNATED STATES: DE; FR; GB

INTERNATIONAL PATENT CLASS: A61B-019/00;

NOTE:

No A-document published by EPO

LANGUAGE (Publication,Procedural,Application): English; English; Finnish

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS B                           | (English) | 9833   | 346        |
| CLAIMS B                           | (German)  | 9833   | 339        |
| CLAIMS B                           | (French)  | 9833   | 358        |
| SPEC B                             | (English) | 9833   | 3205       |
| Total word count - document A      |           |        | 0          |
| Total word count - document B      |           |        | 4248       |
| Total word count - documents A + B |           |        | 4248       |
| ?                                  |           |        |            |

23/3,AB/1 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6682965 INSPEC Abstract Number: C2000-10-5540B-001

**Title: On plane shape perception by displacement with a point-contact type force feedback device**

Author(s): Yamashita, J.; Fukui, Y.; Morikawa, O.; Sato, S.

Author Affiliation: AIST, Nat. Inst. of Biosci. & Human Technol., Japan

Journal: Transactions of the Information Processing Society of Japan  
vol.41, no.5 p.1298-307

Publisher: Inf. Process. Soc. Japan,

Publication Date: May 2000 Country of Publication: Japan

CODEN: JSGRD5 ISSN: 0387-5806

SICI: 0387-5806(200005)41:5L:1298:PSPD;1-L

Material Identity Number: T205-2000-007

Language: Japanese

Abstract: **Haptic** /force feedback device is an important type of three-dimensional **haptic** display whose application fields include **computer aided design** and **surgical simulation**. With such a device, three elements of feedback force (magnitude, direction, and displacement) can be controlled independently to give **haptic** illusion as well as natural **haptic simulation** of virtual objects. To date, however, shape perception factors have not been well studied. This paper presents experiments on the effect of displacement in plane shape perception with a point contact type force feedback device. The subjects changed the height  $h$  of smooth mountainous stimulus shape (width  $2\omega$  and stiffness  $s$ ) to determine parameters and their thresholds for the shape perceived as flat. The feedback force direction was fixed upward, the same as a horizontal plane, to see the effect of displacement. A shape is felt to be flat (1) if its height is smaller than absolute threshold value  $h_{\text{sub at}} = 0.034 \cdot \omega + 0.022$  (where  $s$  is 0.25-0.5 N/mm and  $\omega$  is 20-40 mm), or (2) if force for its height  $h$ , calculated by  $h \cdot s$ , is smaller than 0.18 N (where  $s$  is 0.25-0.5 N/mm and  $\omega$  is 5-20 mm).

Subfile: C

Copyright 2000, IEE

23/3,AB/2 (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6476018 INSPEC Abstract Number: A2000-04-8745-056, C2000-02-7330-398

**Title: Biomechanic-based simulation of knee dynamics**

Author(s): Keeve, E.; Kikinis, R.

Author Affiliation: Harvard Med. Sch., Brigham & Women's Hosp., Boston, MA, USA

Conference Title: Proceedings of the First Joint BMES/EMBS Conference. 1999 IEEE Engineering in Medicine and Biology 21st Annual Conference and the 1999 Annual Fall Meeting of the Biomedical Engineering Society (Cat. No.99CH37015) Part vol.1 p.558 vol.1

Publisher: IEEE, Piscataway, NJ, USA

Publication Date: 1999 Country of Publication: USA 2 vol. vi+1345 pp.

ISBN: 0 7803 5674 8 Material Identity Number: XX-1999-03127

U.S. Copyright Clearance Center Code: 0 7803 5674 8/99/\$10.00

Conference Title: Proceedings of the First Joint BMES/EMBS Conference

Conference Sponsor: Medtronic; Johnson & Johnson; Baxter Cardio Vascular Group; Becton Dickinson & Co.; Georgia Biomed. Partnership; Guidant Found.; Kilpatrick Stockton LLP; King & Spaulding; Troutman Sanders LLP; Adv. Tissue Sci.; AVL Biosense Corp.; CUH2A; Ernst & Young LLP; State of Georgia

; Dept. Ind.; Trade & Tourism; Healthdyne Companies; Long Aldrige & Norman; Porex Corp.; Sulzer Innotec; Turner Constr. Company

Conference Date: 13-16 Oct. 1999 Conference Location: Atlanta, GA, USA  
Language: English

Abstract: **Computer** -based biomechanical **modeling** and **simulation** of human organs and their functionality have made a great impact on the field of medicine in the last decade. In this paper we will focus on modeling and **simulating** the kinematics of the human knee joint. Three-dimensional models of a knee are generated from magnetic resonance acquisitions at varying flexion angles. They include more than 40 different anatomical structures like the femur, tibia, patella, ligaments, menisci and muscles. Using collision detection algorithms, deformable models as well as force-feedback devices, the kinematics of the knee joint are **simulated**.

Subfile: A C

Copyright 2000, IEE

**23/3,AB/3 (Item 3 from file: 2)**

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

5944823 INSPEC Abstract Number: C9807-7330-288

**Title: Proceedings of Medicine Meets Virtual Reality IV: Healthcare in the Information Age - Feature Tools for Transforming Medicine**

Editor(s): Weghorst, S.J.; Sieburg, H.B.; Morgan, K.S.

Publisher: IOS Press, Amsterdam, Netherlands

Publication Date: 1996 Country of Publication: Netherlands xvi+734 pp.

ISBN: 90 5199 250 5 Material Identity Number: XX96-00632

Conference Title: Proceedings of Medicine Meets Virtual Reality IV: Healthcare in the Information Age - Feature Tools for Transforming Medicine  
Conference Date: 17-20 Jan. 1996 Conference Location: San Diego, CA, USA

Language: English

Abstract: The following topics were dealt with: augmented reality; **surgery**; patient therapy; data visualization; digital **simulation**; data fusion; biomedical imaging and image processing; health care; medical information systems; training systems; telepresence; user interfaces; planning; **CAD**; endoscopy; echography; patient diagnosis; biomedical education; networked systems; telemedicine; patient care; emergency aid; teleconferencing; the Visible Human project; **haptic** systems; dentistry; patient anatomy; holography; robots; telecontrol; display techniques; human factors; intelligent systems; sensors; and Internet applications.

Subfile: C

Copyright 1998, IEE

**23/3,AB/4 (Item 4 from file: 2)**

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

5147138 INSPEC Abstract Number: A9603-8770G-009, B9602-7520-009, C9602-3385-006

**Title: Ophthalmic microsurgical robot and surgical simulator**

Author(s): Hunter, I.; Jones, L.; Doukoglou, T.; Lafontaine, S.; Hunter, P.; Sagar, M.

Author Affiliation: Dept. of Mech. Eng., MIT, Cambridge, MA, USA

Journal: Proceedings of the SPIE - The International Society for Optical Engineering Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA)  
vol.2351 p.184-90

Publisher: SPIE-Int. Soc. Opt. Eng,  
Publication Date: 1994 Country of Publication: USA  
CODEN: PSISDG ISSN: 0277-786X  
SICI: 0277-786X(1994)2351L:184:OMRS;1-G  
Material Identity Number: C574-95033  
U.S. Copyright Clearance Center Code: 0 8194 1686 X/94/\$6.00  
Conference Title: Telemanipulator and Telepresence Technologies  
Conference Sponsor: SPIE; IEEE NCC  
Conference Date: 31 Oct.-1 Nov. 1994 Conference Location: Boston, MA,  
USA

Language: English

Abstract: A teleoperated microsurgical robot has been developed together with a virtual environment for microsurgery on the eye. Visual and mechanical information is relayed via bidirectional pathways between the slave and master of the microsurgical robot. The system permits surgeons to operate in one of three alternative modes: on real tissue; on physically **simulated** tissue in a mannequin, or on a **computer** based physical **model** contained within the ophthalmic virtual environment. In all three modalities, forces generated during tissue manipulation (i.e. resecting, probing) are fed back to the surgeon via a force reflecting interface to give the **haptic** sensations (i.e. "feel") appropriate to the actions being performed. The microsurgical robot has been **designed** so that the master and slave systems can be in physically separate environments which permits remote **surgery** to be performed. The system attempts to create an immersive environment for the operator by including not only visual and **haptic** feedback, but also auditory, cutaneous and ultimately, olfactory sensations.

Subfile: A B C

Copyright 1996, IEE

23/3,AB/5 (Item 1 from file: 6)

DIALOG(R)File 6:NTIS

(c) 2003 NTIS, Intl Cpyrght All Rights Res. All rts. reserv.

1915622 NTIS Accession Number: AD-A297 231/3

Haptic **Interface for Virtual Reality** Simulation and Training. Phase 1  
(Final technical rept. 1 Nov 94-30 Apr 95)

Rosenberg, L. B. ; Lacey, T. A. ; Stredney, D.

Immersion Human Interface Corp., San Jose, CA.

Corp. Source Codes: 111438000; 429727

Report No.: AFOSR-TR-95-0482

30 Jun 95 78p

Languages: English

Journal Announcement: GRAI9602

Product reproduced from digital image. Order this product from NTIS by:  
phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries);  
fax at (703)321-8547; and email at orders@ntis.fedworld.gov. NTIS is  
located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

NTIS Prices: PC A05/MF A01

Advances in graphic display technologies have made virtual reality (VR) and scientific visualization applications accessible to a wide user population. Unfortunately, few human interface tools exist to allow users to interact naturally with these powerful graphical environments. To address this need, Immersion Corporation has developed a user interface mechanism to allow natural manual interaction with 3-D environments which provides realistic force feedback to the user. This haptic display methodology combines high fidelity, low cost, and inherent safety to allow force reflection technology to become commercially feasible. The long term objective is to produce a 3-D **haptic** interface for virtual environments.

Phase 1 focused on producing one-dimensional **haptic** interface hardware and incorporating this technology into a real world VR application. Immersion and the Ohio Supercomputer Center have worked together to produce a virtual **simulation** of epidural analgesia, a medical procedure that requires delicate needle insertions into the spinal column. The resulting VR **simulation** is so realistic in look and feel, it can actually be used as a training environment to teach doctors to perform the dexterous manual procedure, allowing them to learn manual technique and explore the associated physical sensations without the risks or costs associated with using real biological specimens. (AN).

**23/3,AB/6** (Item 1 from file: 8)  
DIALOG(R)File 8: Ei Compendex(R)  
(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05437636

E.I. No: EIP99124941762

**Title: Cobots**

Author: Peshkin, Michael; Colgate, F. Edward

Corporate Source: Northwestern Univ, Evanston, IL, USA

Source: Industrial Robot v 26 n 5 1999. p 335-341

Publication Year: 1999

CODEN: IDRBAT ISSN: 0143-991X

Language: English

Abstract: Collaborative robots - 'cobots' - are intended for direct interaction with a human worker, handling a shared payload. They are marked departure from autonomous industrial robots which must be isolated from people for safety reasons. Cobots are also distinct from teleoperators, in which a human operator controls a robot and payload remotely. Cobots interact with people by producing software-defined 'virtual surfaces' which constrain and guide the motion of the shared payload, but add little or no power. Ergonomic as well as productivity benefits result from combining the strength and computer-interface of the cobot with the sensing and dexterity of the human worker. This paper explains cobots as one approach to an emerging class of materials handling equipment called Intelligent Assist Devices (IADs). We describe two cobots of this class presently in industrial testbed settings. Future applications of cobots virtual surfaces are tool guidance in image guided **surgery**, and **haptic** display in which the surfaces of a **CAD** model can be felt. (Author abstract) 7 Refs.

**23/3,AB/7** (Item 2 from file: 8)  
DIALOG(R)File 8: Ei Compendex(R)  
(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

04622046

E.I. No: EIP97023517501

**Title: User requirements when interacting with virtual objects**

Author: Meech, J.F.; Solomonides, A.E.

Corporate Source: Interface Technology Research Ltd, Bristol, UK

Conference Title: Proceedings of the IEE Colloquium on Virtual Reality - User Issues

Conference Location: London, UK Conference Date: 19960325

E.I. Conference No.: 45941

Source: IEE Colloquium (Digest) n 068 1996. 3p

Publication Year: 1996

CODEN: DCILDN ISSN: 0963-3308

Language: English

Abstract: Many industrial applications of virtual reality will benefit

from the introduction of manipulation in the virtual environment. Applications in **computer aided design** and manufacturing ( **CAD /CAM**), **design** prototyping and production evaluation will be enhanced by allowing users to manipulate virtual objects before manufacturing them. In addition, training **simulators** for **surgical** training, operation of control panels, and working in hostile environments will benefit from such a capability. Some devices which provide tactile feedback are currently being developed to enable the **simulation** of physical contact with a virtual object. Researchers are ensuring that such devices will not create constraints and sensory effects that will get in the way of the users. 3 Refs.

23/3,AB/8 (Item 1 from file: 73)  
DIALOG(R)File 73:EMBASE  
(c) 2003 Elsevier Science B.V. All rts. reserv.

07407891 EMBASE No: 1998318014  
Simulation of endoscopic surgery  
Ayache N.; Cotin S.; Delingette H.; Cibmen J.-M.; Russier Y.; Mauescaux J.  
N. Ayache, Projet Epidaure, INRIA Sophia Antipolis, 2004 route des Lucioles - BP 93, F-06902 Sophia Antipolis Cedex France  
Minimally Invasive Therapy and Allied Technologies ( MINIMALLY INVASIVE THER. ALLIED TECHNOL. ) (United Kingdom) 1998, 7/2 (71-77)  
CODEN: MITAF ISSN: 1364-5706  
DOCUMENT TYPE: Journal; Article  
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH  
NUMBER OF REFERENCES: 19

This paper describes preliminary work on virtual reality technology applied to liver **surgery** and proposes several enhancements leading towards realistic **surgical simulation**. We have built a realistic model of the liver, including the capsule and the four internal arborescences, from a complete set of slice images. A linear elastic biomechanical model was computed using a finite elements method (FEM). This task was performed off-line, by pre-computing all possible deformations and force reactions. This approach allows real-time interaction during the **simulation**. The user interaction is effected by a set of mechanical devices, representing laparoscopic instruments. This **haptic** interface allows the surgeon to feel the contact forces exerted by the virtual deformable liver-model. The main medical applications of the **simulator** are in **surgical** planning, teaching and training. The combination of **surgical** planning and **simulation** will lead to improved intervention efficiency and optimal care delivery.

23/3,AB/9 (Item 1 from file: 155)  
DIALOG(R)File 155:MEDLINE(R)  
(c) format only 2003 The Dialog Corp. All rts. reserv.

09147826 20449784 PMID: 10994331  
[A 3-D capsular bag model for describing biomechanical properties of neu intraocular lenses]  
Ein 3-D-Kapselsackmodell zur Beschreibung der biomechanischen Eigenschaften neuer Kunstlinsentypen.  
Beck R; Pfeiffer K; Stave J; Guthoff R  
Universitäts-Augenklinik Rostock.  
Der Ophthalmologe - Zeitschrift der Deutschen Ophthalmologischen Gesellschaft (GERMANY) Aug 2000, 97 (8) p546-51, ISSN 0941-293X  
Journal Code: 9206148

Document type: Journal Article ; English Abstract

Languages: GERMAN

Main Citation Owner: NLM

Record type: Completed

**BACKGROUND:** This study quantified the geometric deformation of the capsular bag following implantation of various intraocular lenses (IOL) using a three-dimensional capsular bag model made of silicone caoutchouc. **METHODS:** After implantation of 13 different IOLs (polymethylmethacrylate, silicone acrygel) into the artificial bag, the induced capsular bag deformation was measured and analyzed. The posterior space between IOL and capsule was examined by ultrasonographic biomicroscopy. **RESULTS:** Polymethylmethacrylate IOLs with C- **haptic design** induced a greater deformation of the capsular bag than silicone lenses; however, both types showed a larger gap posterior to the IOL than acrygel lenses. Acrygel IOLs with different **haptic design** revealed only minimal deformation with close contact posteriorly. **CONCLUSIONS:** The presented three-dimensional model **simulates** the biomechanical and geometrical parameters of the vital capsular bag. Further investigations may determine a correlation of close posterior IOL contact and lens epithelial cell progression.

23/3,AB/10 (Item 2 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

(c) format only 2003 The Dialog Corp. All rts. reserv.

08827096 20110678 PMID: 10646758

**Volumetric object modeling for surgical simulation .**

Gibson S; Fyock C; Grimson E; Kanade T; Kikinis R; Lauer H; McKenzie N; Mor A; Nakajima S; Ohkami H; Osborne R; Samosky J; Sawada A

MERL, Cambridge, MA 02139, USA. gibson@merl.com

Medical image analysis (ENGLAND) Jun 1998 , 2 (2) p121-32, ISSN 1361-8415 Journal Code: 9713490

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

**Surgical simulation** has many applications in medical education, **surgical** training, **surgical** planning and intra-operative assistance. However, extending current surface-based **computer** graphics methods to **model** phenomena such as the deformation, cutting, tearing or repairing of soft tissues poses significant challenges for real-time interactions. This paper discusses the use of volumetric methods for modeling complex anatomy and tissue interactions. New techniques are introduced that use volumetric methods for modeling soft-tissue deformation and tissue cutting at interactive rates. An initial prototype for **simulating** arthroscopic knee **surgery** is described which uses volumetric models of the knee derived from 3-D magnetic resonance imaging, visual feedback via real-time volume and polygon rendering, and **haptic** feedback provided by a force-feedback device.

?

24/3/1 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

7205492 INSPEC Abstract Number: C2002-04-7460-056

**Title: Multimedia environment in complex aerospace engineering**

Author(s): Dureigne, M.

Author Affiliation: EADS - Centre Commun de Recherche Louis Bleriot, Suresnes, France

Conference Title: Proceedings 10th IEEE International Workshop on Robot and Human Interactive Communication. ROMAN 2001 (Cat. No.01TH8591) p. 390-5

Publisher: IEEE, Piscataway, NJ, USA

Publication Date: 2001 Country of Publication: USA 660 pp.

ISBN: 0 7803 7222 0 Material Identity Number: XX-2002-00245

U.S. Copyright Clearance Center Code: 0-7803-7222-0/01/\$10.00

Conference Title: Proceedings 10th IEEE International Workshop on Robot and Human Interactive Communication. ROMAN 2001

Conference Sponsor: IEEE Ind. Electron. Soc.; Robotics Soc. Japan; Virtual Reality Soc. Japan; New Technol. Found.; French Embassy in Japan; Astrium (Germany); DaimlerChrysler (G); GPS (G); KUKA (G); Propack Data (G); Siemens (G); Sony Corp. (J); Z+F (G)

Conference Date: 18-21 Sept. 2001 Conference Location: Bordeaux, Paris, France

Language: English

Subfile: C

Copyright 2002, IEE

24/3/2 (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

7181746 INSPEC Abstract Number: C2002-03-3390T-011

**Title: Design and analysis of a 2-D haptic interface device in virtual reality**

Author(s): Ming-Guo Her; Karkoub, M.; Kuei-Shu Hsu

Author Affiliation: Dept. of Mech. Eng., Tatung Univ., Taipei, Taiwan

Journal: International Journal of Computer Applications in Technology vol.15, no.1-3 p.60-9

Publisher: Inderscience Enterprises,

Publication Date: 2001 Country of Publication: Switzerland

CODEN: IJCTEK ISSN: 0952-8091

SICI: 0952-8091(2001)15:1/3L:60:DAHI;1-E

Material Identity Number: M593-2002-001

U.S. Copyright Clearance Center Code: 0952-8091/01/\$10.00+.50

Language: English

Subfile: C

Copyright 2002, IEE

24/3/3 (Item 3 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

7076134 INSPEC Abstract Number: C2001-12-6130V-009

**Title: A tangible AR desktop environment**

Author(s): Regenbrecht, H.; Baratoff, G.; Wagner, M.

Author Affiliation: Virtual Reality Competence Center, DaimlerChrysler AG, Ulm, Germany

Journal: Computers & Graphics vol.25, no.5 p.755-63

John Sims EIC 3700 308-4836



Publisher: Elsevier,  
Publication Date: Oct. 2001 Country of Publication: UK  
CODEN: COGRD2 ISSN: 0097-8493  
SICI: 0097-8493(200110)25:5L:755:TDE;1-Y  
Material Identity Number: C186-2001-005  
U.S. Copyright Clearance Center Code: 0097-8493/01/\$20.00  
Language: English  
Subfile: C  
Copyright 2001, IEE

**24/3/4 (Item 4 from file: 2)**  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

7031583 INSPEC Abstract Number: C2001-10-7400-024  
**Title: Building on diversity: crafting a paradigm for digital design environments**  
Author(s): McLundie, M.  
Author Affiliation: Glasgow Sch. of Art, UK  
Journal: Digital Creativity vol.12, no.2 p.109-11  
Publisher: Swets & Zeitlinger,  
Publication Date: 2001 Country of Publication: Netherlands  
CODEN: DICRFL ISSN: 1462-6268  
SICI: 1462-6268(2001)12:2L:109:BDCP;1-S  
Material Identity Number: H103-2001-003  
U.S. Copyright Clearance Center Code: 1462-6268/2001/1202-0109\$16.00  
Language: English  
Subfile: C  
Copyright 2001, IEE

**24/3/5 (Item 5 from file: 2)**  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

7029030 INSPEC Abstract Number: C2001-10-7440-046  
**Title: A VRML interface for a knowledge-based structural design system**  
Author(s): Wang, J.; Wang, Y.  
Author Affiliation: Dept. of Civil Eng., Tamkang Univ., Tamsui, Taiwan  
Conference Title: Proceedings Fifth International Conference on Information Visualisation p.601-5  
Editor(s): Banissi, E.; Khosrowshahi, F.; Sarfraz, M.; Ursyn, A.  
Publisher: IEEE Comput. Soc, Los Alamitos, CA, USA  
Publication Date: 2001 Country of Publication: USA xxiv+769 pp.  
ISBN: 0 7695 1195 3 Material Identity Number: XX-2001-01684  
U.S. Copyright Clearance Center Code: 0 7695 1195 3/2001/\$10.00  
Conference Title: Proceedings Fifth International Conference on Information Visualisation  
Conference Date: 25-27 July 2001 Conference Location: London, UK  
Language: English  
Subfile: C  
Copyright 2001, IEE

**24/3/6 (Item 6 from file: 2)**  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6935574 INSPEC Abstract Number: C2001-07-7480-007  
**Title: Design and formation system of three-dimensional structure using**

John Sims EIC 3700 308-4836

**virtual reality - concept and trial development of the system**

Author(s): Hirose, S.; Mori, K.; Mun, R.; Lee, Y.; Kanou, Y.  
Author Affiliation: Mech. Eng. Lab., Agency of Ind. Sci. & Technol.,  
Ibaraki, Japan  
Journal: Journal of Mechanical Engineering Laboratory vol.54, no.4  
p.35-42  
Publisher: Mech. Eng. Lab,  
Publication Date: July 2000 Country of Publication: Japan  
CODEN: KGKSBL ISSN: 0388-4252  
SICI: 0388-4252(200007)54:4L.35:DFST;1-9  
Material Identity Number: J174-2001-001  
Language: Japanese  
Subfile: C  
Copyright 2001, IEE

**24/3/7 (Item 7 from file: 2)**

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6875290 INSPEC Abstract Number: C2001-05-6130B-002

**Title: A novel haptics -based interface and sculpting system for physics-based geometric design**

Author(s): Dachille, F., IX; Qin, H.; Kaufman, A.  
Author Affiliation: Dept. of Comput. Sci., State Univ. of New York, Stony  
Brook, NY, USA  
Journal: Computer Aided Design vol.33, no.5 p.403-20  
Publisher: Elsevier,  
Publication Date: 17 April 2001 Country of Publication: UK  
CODEN: CAIDA5 ISSN: 0010-4485  
SICI: 0010-4485(20010417)33:5L.403:NHBI;1-P  
Material Identity Number: C090-2001-004  
U.S. Copyright Clearance Center Code: 0010-4485/2001/\$20.00  
Language: English  
Subfile: C  
Copyright 2001, IEE

**24/3/8 (Item 8 from file: 2)**

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6866160 INSPEC Abstract Number: C2001-04-3390T-030

**Title: Development of a force reflection master manipulator and graphic simulator**

Author(s): Hyokjo Kwon; Sangduk Jung; Chaeyoun Oh; Kiho Kim; Jangjin Park  
Author Affiliation: Graduate Sch., Chonbuk Nat. Univ., Chonju, South  
Korea  
Conference Title: Proceedings of the IASTED International Conference  
Intelligent Systems and Control p.404-9  
Editor(s): Hamza, M.H.  
Publisher: IASTED/ACTA Press, Anaheim, CA, USA  
Publication Date: 2000 Country of Publication: USA iv+432 pp.  
ISBN: 0 88986 296 6 Material Identity Number: XX-2000-02158  
Conference Title: Proceedings of 2000 Conference on Intelligent Systems  
and Control (SC 2000)  
Conference Sponsor: IASTED; IASTED Tech. Committee on Control  
Conference Date: 14-16 Aug. 2000 Conference Location: Honolulu, HI,  
USA  
Language: English  
Subfile: C

Copyright 2001, IEE

24/3/9 (Item 9 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6857158 INSPEC Abstract Number: A2001-07-0630C-013, B2001-04-7320C-015, C2001-04-7410H-009

**Title: System for acquisition of three-dimensional shape and movement using digital Light-in-Flight holography**

Author(s): Carlsson, T.E.; Nilsson, B.; Gustafsson, J.

Author Affiliation: Dept. of Production Eng., R. Inst. of Technol., Stockholm, Sweden

Journal: Optical Engineering vol.40, no.1 p.67-75

Publisher: SPIE,

Publication Date: Jan. 2001 Country of Publication: USA

CODEN: OPEGAR ISSN: 0091-3286

SICI: 0091-3286(200101)40:1L:67:SATD;1-U

Material Identity Number: 0036-2001-001

U.S. Copyright Clearance Center Code: 0091-3286/2001/\$15.00

Language: English

Subfile: A B C

Copyright 2001, IEE

24/3/10 (Item 10 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6853485 INSPEC Abstract Number: C2001-04-7820-008

**Title: Le Musee des Formes Pures [The Museum of Pure Form]**

Author(s): Bergamasco, M.

Author Affiliation: PERCRO, Scuola Superiore S.Anna, Pisa, Italy

Conference Title: 8th IEEE International Workshop on Robot and Human Interaction. RO-MAN '99 (Cat. No.99TH8483) p.XXI-XXIII

Publisher: IEEE, Piscataway, NJ, USA

Publication Date: 1999 Country of Publication: USA xxix+430 pp.

ISBN: 0 7803 5841 4 Material Identity Number: XX-2001-00005

U.S. Copyright Clearance Center Code: 0 7803 5841 4/99/\$10.00

Conference Title: 8th IEEE International Workshop on Robot and Human Interaction. RO-MAN '99

Conference Sponsor: Scuola Superiore S.Anna; Robotics Soc. Japan; IEEE Ind. Electron. Soc.; IEEE Robotics & Autom. Soc.; Soc. Instrum. & Control Eng.; New Technol. Found

Conference Date: 27-29.Sept. 1999 Conference Location: Pisa, Italy

Language: English

Subfile: C

Copyright 2001, IEE

24/3/11 (Item 11 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6684525 INSPEC Abstract Number: C2000-10-7480-014

**Title: Dexterous modeling device for industrial design**

Author(s): Kameyama, K.

Author Affiliation: Res. & Dev. Center, Toshiba Corp., Kawasaki, Japan

Conference Title: Human-Computer Interaction: Ergonomics and User Interfaces. Proceedings of HCI International '99 (8th International

John Sims EIC 3700 308-4836

Conference on Human-Computer Interaction) Part vol.2 p.1035-9 vol.2  
Editor(s): Bullinger, H.-J.; Ziegler, J.  
Publisher: Lawrence Erlbaum Associates, Mahwah, NJ, USA  
Publication Date: 1999 Country of Publication: USA 2  
vol.(xxx+1356+1355) pp.  
ISBN: 0 8058 3391 9 Material Identity Number: XX-2000-01659  
Conference Title: Proceedings of 8th International Conference on Human  
Computer Interaction and Special Session on Intelligent Tutoring and  
Learning Environments  
Conference Date: 22-26 Aug. 1999 Conference Location: Munich, Germany  
Language: English  
Subfile: C  
Copyright 2000, IEE

24/3/12 (Item 12 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6656450 INSPEC Abstract Number: C2000-09-6180-016  
**Title: Haptic sculpting of dynamic surfaces**  
Author(s): Dachille, F.; Qin, H.; Kaufman, A.; El-Sana, J.  
Author Affiliation: Dept. of Comput. Sci., State Univ. of New York, Stony  
Brook, NY, USA  
Conference Title: Proceedings 1999 Symposium on Interactive 3D Graphics  
p.103-10, 227  
Publisher: ACM, New York, NY, USA  
Publication Date: 1999 Country of Publication: USA 237 pp.  
ISBN: 1 58113 082 1 Material Identity Number: XX-1999-01333  
U.S. Copyright Clearance Center Code: 1 58113 082 1/99/04...\$5.00  
Conference Title: Proceedings of the 1999 Symposium on Interactive 3D  
Graphics  
Conference Sponsor: ACM  
Conference Date: 26-28 April 1999 Conference Location: Atlanta, GA,  
USA  
Language: English  
Subfile: C  
Copyright 2000, IEE

24/3/13 (Item 13 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6652713 INSPEC Abstract Number: C2000-09-6180G-001  
**Title: HI/sup 2/: a two-degrees-of-freedom planar highly isotropic haptic  
interface for the desktop**  
Author(s): Frisoli, A.; Prisco, G.M.; Salsedo, F.; Bergamasco, M.  
Author Affiliation: Scuola Superiore Sant'Anna, PERCRO, Pisa, Italy  
Journal: Proceedings of the SPIE - The International Society for Optical  
Engineering Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA)  
vol.3840 p.65-75  
Publisher: SPIE-Int. Soc. Opt. Eng.  
Publication Date: 1999 Country of Publication: USA  
CODEN: PSISDG ISSN: 0277-786X  
SICI: 0277-786X(1999)3840L:65:DFPH;1-R  
Material Identity Number: C574-2000-012  
U.S. Copyright Clearance Center Code: 0277-786X/99/\$10.00  
Conference Title: Telemanipulator and Telepresence Technologies VI  
Conference Sponsor: SPIE  
Conference Date: 19-20 Sept. 1999 Conference Location: Boston, MA, USA

Language: English  
Subfile: C  
Copyright 2000, IEE

24/3/14 (Item 14 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6635420 INSPEC Abstract Number: C2000-08-7400-009  
**Title: Complex construction kits for coupled real and virtual engineering workspaces**  
Author(s): Bruns, W.F.  
Author Affiliation: Res. Center for Work, Environ., Technol., Bremen Univ., Germany  
Conference Title: Cooperative Buildings. Integrating Information, Organizations and Architecture. Second International Workshop, CoBuild'99. Proceedings (Lecture Notes in Computer Science Vol.1670) p.55-68  
Editor(s): Streitz, N.A.; Siegal, J.; Hartkopf, V.; Konomi, S.  
Publisher: Springer-Verlag, Berlin, Germany  
Publication Date: 1999 Country of Publication: Germany x+229 pp.  
ISBN: 3 540 66596 X Material Identity Number: XX-1999-03161  
Conference Title: Cooperative Buildings. Integrating Information, Organizations and Architecture. Second International Workshop, CoBuild'99  
Conference Date: 1-2 Oct. 1999 Conference Location: Pittsburgh, PA, USA  
Language: English  
Subfile: C  
Copyright 2000, IEE

24/3/15 (Item 15 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.  
6559540 INSPEC Abstract Number: C2000-05-6130B-021  
**Title: inTouch: interactive multiresolution modeling and 3D painting with a haptic interface**  
Author(s): Gregory, A.D.; Ehmann, S.A.; Lin, M.C.  
Author Affiliation: Dept. of Comput. Sci., North Carolina Univ., Chapel Hill, NC, USA  
Conference Title: Proceedings IEEE Virtual Reality 2000 (Cat. No.00CB37048) p.45-52  
Editor(s): Feiner, S.; Thalmann, D.  
Publisher: IEEE Comput. Soc, Los Alamitos, CA, USA  
Publication Date: 2000 Country of Publication: USA xx+302 pp.  
ISBN: 0 7695 0478 7 Material Identity Number: XX-2000-00678  
U.S. Copyright Clearance Center Code: 0 7695 0478 7/2000/\$10.00  
Conference Title: Proceedings IEEE Virtual Reality 2000  
Conference Sponsor: IEEE Comput. Soc. Tech. Committee on Visualization & Graphics  
Conference Date: 18-22 March 2000 Conference Location: New Brunswick, NJ, USA  
Language: English  
Subfile: C  
Copyright 2000, IEE

24/3/16 (Item 16 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6559539 INSPEC Abstract Number: C2000-05-7400-027

**Title:** Optimization-based virtual surface contact manipulation at force control rates

Author(s): Nelson, D.D.; Cohen, E.

Author Affiliation: Dept. of Comput. Sci., Utah Univ., Salt Lake City, UT, USA

Conference Title: Proceedings IEEE Virtual Reality 2000 (Cat. No.00CB37048) p.37-44

Editor(s): Feiner, S.; Thalmann, D.

Publisher: IEEE Comput. Soc, Los Alamitos, CA, USA

Publication Date: 2000 Country of Publication: USA xx+302 pp.

ISBN: 0 7695 0478 7 Material Identity Number: XX-2000-00678

U.S. Copyright Clearance Center Code: 0 7695 0478 7/2000/\$10.00

Conference Title: Proceedings IEEE Virtual Reality 2000

Conference Sponsor: IEEE Comput. Soc. Tech. Committee on Visualization & Graphics

Conference Date: 18-22 March 2000 Conference Location: New Brunswick, NJ, USA

Language: English

Subfile: C

Copyright 2000, IEE

**24/3/17 (Item 17 from file: 2)**

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6470251 INSPEC Abstract Number: A2000-04-4240K-007, B2000-02-4350-076

**Title:** Development of a 3D camera

Author(s): Carlsson, T.; Gustafsson, J.; Nilsson, B.

Author Affiliation: Dept. of Mater. Process., R. Inst. of Technol., Stockholm, Sweden

Journal: Proceedings of the SPIE - The International Society for Optical Engineering Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA) vol.3637 p.218-24

Publisher: SPIE-Int. Soc. Opt. Eng,

Publication Date: 1999 Country of Publication: USA

CODEN: PSISDG ISSN: 0277-786X

SICI: 0277-786X(1999)3637L:218:DC;1-S

Material Identity Number: C574-1999-126

U.S. Copyright Clearance Center Code: 0277-786X/99/\$10.00

Conference Title: Practical Holography XIII

Conference Sponsor: SPIE

Conference Date: 25 Jan. 1999 Conference Location: San Jose, CA, USA

Language: English

Subfile: A B

Copyright 2000, IEE

**24/3/18 (Item 18 from file: 2)**

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6397772 INSPEC Abstract Number: C1999-12-7440-115

**Title:** Interactive mechanical design variation for haptics and CAD

Author(s): Nelson, D.D.; Cohen, E.

Author Affiliation: Dept. of Comput. Sci., Utah Univ., Salt Lake City, UT, USA

Journal: Computer Graphics Forum Conference Title: Comput. Graph. Forum (UK) vol.18, no.3 p.C287-96

John Sims EIC 3700 308-4836

Publisher: Blackwell Publishers for Eurographics Assoc,  
Publication Date: 1999 Country of Publication: UK  
CODEN: CGFODY ISSN: 0167-7055  
SICI: 0167-7055(1999)18:3L.c287:IMDV;1-1  
Material Identity Number: B332-1999-004  
Conference Title: European Association for Computer Graphics 20th Annual  
Conference. EUROGRAPHICS'99  
Conference Sponsor: 3M Italia; AGFA Copying Syst. Div.; A.I.S.; ALINARI;  
ALITALIA Official Conf. Carrier; et al  
Conference Date: 7-11 Sept. 1999 Conference Location: Milan, Italy  
Language: English  
Subfile: C  
Copyright 1999, IEE

24/3/19 (Item 19 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6396093 INSPEC Abstract Number: C1999-12-6130V-013  
**Title: Cooperative object manipulation in virtual space using virtual physics**  
Author(s): Noma, H.; Miyasato, T.  
Author Affiliation: ATR Media Integration & Commun. Res. Lab., Kyoto, Japan  
Conference Title: Proceedings of the ASME Dynamic Systems and Control Division p.101-6  
Editor(s): Rizzoni, G.  
Publisher: ASME, New York, NY, USA  
Publication Date: 1997 Country of Publication: USA x+766 pp.  
ISBN: 0 7918 1824 1 Material Identity Number: XX-1999-00147  
Conference Title: Proceedings of ASME Dynamic Systems and Control Division - 1997  
Conference Sponsor: ASME  
Conference Date: 16-21 Nov. 1997 Conference Location: Dallas, TX, USA  
Language: English  
Subfile: C  
Copyright 1999, IEE

24/3/20 (Item 20 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6396092 INSPEC Abstract Number: C1999-12-7480-089  
**Title: Direct integration of haptic user interface in CAD systems**  
Author(s): Stewart, P.; Yifan Chen; Buttolo, P.  
Author Affiliation: Sci. Res. Lab., Ford Motor Co., Dearborn, MI, USA  
Conference Title: Proceedings of the ASME Dynamic Systems and Control Division p.93-9  
Editor(s): Rizzoni, G.  
Publisher: ASME, New York, NY, USA  
Publication Date: 1997 Country of Publication: USA x+766 pp.  
ISBN: 0 7918 1824 1 Material Identity Number: XX-1999-00147  
Conference Title: Proceedings of ASME Dynamic Systems and Control Division - 1997  
Conference Sponsor: ASME  
Conference Date: 16-21 Nov. 1997 Conference Location: Dallas, TX, USA  
Language: English  
Subfile: C  
Copyright 1999, IEE

24/3/21 (Item 21 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6396085 INSPEC Abstract Number: C1999-12-6130V-010  
**Title: Maneuverable NURBS models within a haptic virtual environment**  
Author(s): Thompson, T.V., II; Nelson, D.D.; Cohen, E.; Hollerbach, J.  
Author Affiliation: Dept. of Comput. Sci., Utah Univ., Salt Lake City, UT, USA  
Conference Title: Proceedings of the ASME Dynamic Systems and Control Division p.37-44  
Editor(s): Rizzoni, G.  
Publisher: ASME, New York, NY, USA  
Publication Date: 1997 Country of Publication: USA x+766 pp.  
ISBN: 0 7918 1824 1 Material Identity Number: XX-1999-00147  
Conference Title: Proceedings of ASME Dynamic Systems and Control Division - 1997  
Conference Sponsor: ASME  
Conference Date: 16-21 Nov. 1997 Conference Location: Dallas, TX, USA  
Language: English  
Subfile: C  
Copyright 1999, IEE

24/3/22 (Item 22 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6395917 INSPEC Abstract Number: C1999-12-7480-087  
**Title: Virtual assembly and disassembly simulation**  
Author(s): Gutierrez, T.; Barbero, J.I.; Eguidazu, A.  
Author Affiliation: LABEIN, Bilbao, Spain  
Conference Title: Intelligent Assembly and Disassembly (IAD'98). Proceedings volume from the IFAC Workshop p.35-40  
Editor(s): Kopacek, P.; Noe, D.  
Publisher: Elsevier Sci, Kidlington, UK  
Publication Date: 1998 Country of Publication: UK vi+183 pp.  
ISBN: 0 08 043042 2 Material Identity Number: XX-1998-01134  
Conference Title: Proceedings of IAD '98 1st IFAC Intelligent Assembly and Disassembly  
Conference Sponsor: IFAC  
Conference Date: 21-23 May 1998 Conference Location: Bled, Slovenia  
Language: English  
Subfile: C  
Copyright 1999, IEE

24/3/23 (Item 23 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6296490 INSPEC Abstract Number: C1999-08-7480-110  
**Title: Haptic feedback for virtual assembly**  
Author(s): Luecke, G.R.; Zafer, N.  
Author Affiliation: Iowa State Univ., Ames, IA, USA  
Journal: Proceedings of the SPIE - The International Society for Optical Engineering  
Conference Title: Proc. SPIE - Int. Soc. Opt. Eng. (USA)  
vol.3524 p.115-22  
Publisher: SPIE-Int. Soc. Opt. Eng,



Publication Date: 1998 Country of Publication: USA  
CODEN: PSISDG ISSN: 0277-786X  
SICI: 0277-786X(1998)3524L:115:HFVA;1-6  
Material Identity Number: C574-1999-065  
U.S. Copyright Clearance Center Code: 0277-786X/98/\$10.00  
Conference Title: Telem manipulator and Telepresence Technologies V  
Conference Sponsor: SPIE  
Conference Date: 4-5 Nov. 1998 Conference Location: Boston, MA, USA  
Language: English  
Subfile: C  
Copyright 1999, IEE

**24/3/24 (Item 24 from file: 2)**

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6280217 INSPEC Abstract Number: C1999-08-6130V-002

**Title: Invited review: the synergy between virtual reality and robotics**

Author(s): Burdea, G.C.

Author Affiliation: Dept. of Electr. & Comput. Eng., Rutgers Univ.,  
Piscataway, NJ, USA

Journal: IEEE Transactions on Robotics and Automation vol.15, no.3  
p.400-10

Publisher: IEEE,

Publication Date: June 1999 Country of Publication: USA

CODEN: IRAUEZ ISSN: 1042-296X

SICI: 1042-296X(199906)15:3L:400:IRSB;1-1

Material Identity Number: M938-1999-004

U.S. Copyright Clearance Center Code: 1042-296X/99/\$10.00

Language: English

Subfile: C

Copyright 1999, IEE

**24/3/25 (Item 25 from file: 2)**

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6259680 INSPEC Abstract Number: C1999-07-7410F-023

**Title: Virtual prototyping of advanced telecommunication products**

Author(s): Pulli, P.; Kerttula, M.; Salmela, M.

Author Affiliation: Infotech Res. Centre, Oulu Univ., Finland

Conference Title: 2nd International Conference on Machine Automation  
Advanced Mechatronics: first-time-right. Proceedings of the ICMA'98

Part vol. 2 p.397-408 vol. 2

Editor(s): Kivikoski, M.

Publisher: Tampere University of Technology, Tampere, Finland

Publication Date: 1998 Country of Publication: Finland 2 vol. 848 pp.

Material Identity Number: XX-1999-01155

Conference Title: Proceedings of 2nd International Conference on Machine  
Automation

Conference Date: 15-18 Sept. 1998 Conference Location: Tampere,  
Finland

Language: English

Subfile: C

Copyright 1999, IEE

**24/3/26 (Item 26 from file: 2)**

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6216803 INSPEC Abstract Number: C1999-05-7850-015

**Title: Second European Conference on Disability, Virtual Reality and Associated Technologies (ECDVRAT'98)**

Journal: International Journal of Virtual Reality vol.3, no.4

Publisher: IPI Press,

Publication Date: 1998 Country of Publication: USA

CODEN: IJVRF8 ISSN: 1081-1451

Material Identity Number: D426-1999-001

Conference Title: Second European Conference on Disability, Virtual Reality and Associated Technologies (ECDVRAT'98)

Conference Date: 1998 Conference Location: Reading, UK

Language: English

Subfile: C

Copyright 1999, IEE

24/3/27 (Item 27 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

5959743 INSPEC Abstract Number: C9808-7420D-005

**Title: A virtual excavator for controller development and evaluation**

Author(s): Diaio, S.P.; Salcudean, S.E.; Reboulet, C.; Tafazoli, S.; Hashtrudi-Zaad, K.

Author Affiliation: Dept. of Electr. & Comput. Eng., British Columbia Univ., Vancouver, BC, Canada

Conference Title: Proceedings. 1998 IEEE International Conference on Robotics and Automation (Cat. No.98CH36146) Part vol.1 p.52-8 vol.1

Publisher: IEEE, New York, NY, USA

Publication Date: 1998 Country of Publication: USA 4 vol. lxxv+3744 pp.

ISBN: 0 7803 4300 X Material Identity Number: XX98-01209

U.S. Copyright Clearance Center Code: 0 7803 4300 X/98/\$10.00

Conference Title: IEEE International Conference on Robotics and Automation

Conference Sponsor: IEEE Robotics & Autom. Soc

Conference Date: 16-20 May 1998 Conference Location: Leuven, Belgium

Language: English

Subfile: C

Copyright 1998, IEE

24/3/28 (Item 28 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

5953360 INSPEC Abstract Number: C9808-3390M-010

**Title: Haptic manipulation of virtual mechanisms from mechanical CAD designs**

Author(s): Nahvi, A.; Nelson, D.D.; Hollerbach, J.M.; Johnson, D.E.

Author Affiliation: Dept. of Comput. Sci. & Mech. Eng., Utah Univ., Salt Lake City, UT, USA

Conference Title: Proceedings. 1998 IEEE International Conference on Robotics and Automation (Cat. No.98CH36146) Part vol.1 p.375-80 vol.1

Publisher: IEEE, New York, NY, USA

Publication Date: 1998 Country of Publication: USA 4 vol. lxxv+3744 pp.

ISBN: 0 7803 4300 X Material Identity Number: XX98-01209

U.S. Copyright Clearance Center Code: 0 7803 4300 X/98/\$10.00

Conference Title: IEEE International Conference on Robotics and Automation

Conference Sponsor: IEEE Robotics & Autom. Soc

Conference Date: 16-20 May 1998 Conference Location: Leuven, Belgium

Language: English

Subfile: C

Copyright 1998, IEE

24/3/29 (Item 29 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

5722540 INSPEC Abstract Number: C9711-6130B-115

**Title: Physically based models for use in a force feedback virtual environment**

Author(s): Edwards, J.C.; Luecke, G.R.

Author Affiliation: Dept. of Mech. Eng., Iowa State Univ., Ames, IA, USA

Conference Title: Proceedings of the Japan-USA Symposium on Flexible Automation - 1996 Part vol.1 p.221-8' vol.1

Editor(s): Stelson, K.; Oba, F.

Publisher: ASME, New York, NY, USA

Publication Date: 1996 Country of Publication: USA 2 vol. xviii+1565 pp.

ISBN: 0 7918 1231 6 Material Identity Number: XX96-02086

Conference Title: Proceedings of 1996 Japan-USA Symposium on Flexible Automation

Conference Sponsor: ASME; Inst. Syst. Control & Inf. Eng. Japan

Conference Date: 7-10 July 1996 Conference Location: Boston, MA, USA

Language: English

Subfile: C

Copyright 1997, IEE

24/3/30 (Item 30 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

5705421 INSPEC Abstract Number: C9711-7480-071

**Title: Prototyping and design for assembly analysis using multimodal virtual environments**

Author(s): Gupta, R.; Whitney, D.; Zeltzer, D.

Author Affiliation: Schlumberger Austin Product Center, Austin, TX, USA

Journal: Computer Aided Design vol.29, no.8 p.585-97

Publisher: Elsevier,

Publication Date: Aug. 1997 Country of Publication: UK

CODEN: CAIDA5 ISSN: 0010-4485

SICI: 0010-4485(199708)29:8L:585:PDAA;1-5

Material Identity Number: C090-97007

U.S. Copyright Clearance Center Code: 0010-4485/97/\$17.00+0.00

Language: English

Subfile: C

Copyright 1997, IEE

24/3/31 (Item 31 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

5684595 INSPEC Abstract Number: C9710-7480-097

**Title: Concept development support with virtual prototyping**

John Sims EIC 3700 308-4836

Author(s): Tuikka, T.  
Author Affiliation: Dept. of Inf. Process. Sci., Oulu Univ., Finland  
Conference Title: Proceedings TeamCAD: GUV/NIST Workshop on Collaborative Design p.217-18  
Editor(s): Rossignac, J.  
Publisher: Georgia Inst. Technol, Atlanta, GA, USA  
Publication Date: 1997 Country of Publication: USA iii+249 pp.  
Material Identity Number: XX97-01574  
Conference Title: Proceedings of TeamCAD: 1st GUV Workshop on Collaborative Design  
Conference Date: 12-13 May 1997 Conference Location: Atlanta, GA, USA  
Language: English  
Subfile: C  
Copyright 1997, IEE

**24/3/32 (Item 32 from file: 2)**  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

5399633 INSPEC Abstract Number: C9611-5540B-005  
**Title: Virtual cooperating manipulators as a virtual reality haptic interface**  
Author(s): Luecke, G.R.; Edwards, J.C.  
Author Affiliation: Dept. of Mech. Eng., Iowa State Univ., Ames, IA, USA  
Conference Title: Proceedings. Third Annual Symposium on Human Interaction with Complex Systems. HICS'96 (Cat. No.96TB100050) p.133-40  
Publisher: IEEE Comput. Soc. Press, Los Alamitos, CA, USA  
Publication Date: 1996 Country of Publication: USA x+285 pp.  
ISBN: 0 8186 7493 8 Material Identity Number: XX96-02783  
U.S. Copyright Clearance Center Code: 0 8186 7493 8/96/\$5.00  
Conference Title: Proceedings Third Annual Symposium on Human Interaction with Complex Systems. HICS'96  
Conference Sponsor: IEEE Comput. Soc.; IEEE Comput. Soc. Tech. Committee on Multimedia Comput.; North Carolina A&T State Univ.; Wright State Univ  
Conference Date: 25-28 Aug. 1996 Conference Location: Dayton, OH, USA  
Language: English  
Subfile: C  
Copyright 1996, IEE

**24/3/33 (Item 1 from file: 6)**  
DIALOG(R)File 6:NTIS  
(c) 2003 NTIS, Intl Cpyrght All Rights Res. All rts. reserv.

2207609 NTIS Accession Number: ADA392659/XAB  
**Virtual Structural Dynamics, Acoustics and Control**  
(Final rept. 31 Mar 2000-30 Mar 2001)  
Baz, A. R.  
Maryland Univ., College Park. Dept. of Mechanical Engineering.  
Corp. Source Codes: 005683036; 219635  
Report No.: ARO-40725.1-EG-RIP  
Jun 2001 7p  
Languages: English  
Journal Announcement: USGRDR0124  
Original contains color plates: All DTIC reproductions will be in black and white.  
Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

NTIS Prices: PC A02/MF A01

**24/3/34 (Item 2 from file: 6)**

DIALOG(R)File 6:NTIS

(c) 2003 NTIS, Intl Cpyrght All Rights Res. All rts. reserv.

2093729 NTIS Accession Number: PB98-170244/XAB

**Haptic Rendering System for Virtual Handheld Electronic Products**

Anttila, T.

Valtion Teknillinen Tutkimuskeskus, Espoo (Finland). Electronics.

Corp. Source Codes: 067526043

Report No.: VTT-PUBS-347; ISBN-951-38-5232-6

May 98 82p

Languages: English Document Type: Thesis

Journal Announcement: GRAI9823

Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.fedworld.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

NTIS Prices: PC A06/MF A01

**24/3/35 (Item 3 from file: 6)**

DIALOG(R)File 6:NTIS

(c) 2003 NTIS, Intl Cpyrght All Rights Res. All rts. reserv.

1634374 NTIS Accession Number: AD-A245 342/1

**Finite Memory Model for Haptic Recognition**

(Master's thesis)

Beierl, P. G.

Naval Postgraduate School, Monterey, CA.

Corp. Source Codes: 019895000; 251450

Dec 91 81p

Languages: English Document Type: Thesis

Journal Announcement: GRAI9210

Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)321-8547; and email at orders@ntis.fedworld.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

NTIS Prices: PC A05/MF A01

**24/3/36 (Item 1 from file: 8)**

DIALOG(R)File 8:EI Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

08512152 E.I. No: EIP01045592746

**Title: Enhancing randomized motion planners: Exploring with haptic hints**

Author: Bayazit, O. Burchan; Song, Guang; Amato, Nancy M.

Corporate Source: Texas A&M Univ, College Station, TX, USA

Source: Autonomous Robots v 10 n 2 Mar 2001. p 163-174

Publication Year: 2001

CODEN: AUROF2 ISSN: 0929-5593

Language: English

**24/3/37 (Item 2 from file: 8)**

DIALOG(R)File 8:EI Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

John Sims EIC 3700 308-4836

06303493 E.I. No: EIP03097373097

**Title: Integrating active tangible devices with a synthetic environment for collaborative engineering**

Author: Ressler, Sandy; Antonishek, Brian; Wang, Qiming; Godil, Afzal  
Corporate Source: Information Technology Laboratory Natl. Inst. of Std. and Technology, Gaithersburg, MD, United States

Conference Title: Proceedings of the 2001 Web3D Symposium  
Conference Location: Paderborn, Germany Conference Date: 20010219-20010222

E.I. Conference No.: 60497

Source: Web3D 2001 Symposium 2001.

Publication Year: 2001

ISBN: 1581133391

Language: English

**24/3/38 (Item 3 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

06022146 E.I. No: EIP02126891025

**Title: Design and optimization of a purely rotational 3 DOF haptic device**

Author: Ullrich, N.G.; Di Lieto, G.; Salsedo, F.; Bergamasco, M.

Corporate Source: PERCRO Scuola Superiore S. Anna, 56126 Pisa, Italy

Conference Title: 10th IEEE International Workshop on Robot and Human Communication

Conference Location: Bordeaux-Paris, France Conference Date: 20010918-20010921

E.I. Conference No.: 59054

Source: Robot and Human Communication - Proceedings of the IEEE International Workshop 2001. p 100-105 (IEEE cat n 01TH8591)

Publication Year: 2001

CODEN: 85QKA5

Language: English

**24/3/39 (Item 4 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05927788 E.I. No: EIP01436705613

**Title: FEM-based subdivision solids for dynamic and haptic interaction**

Author: McDonnell, K.T.; Qin, H.

Corporate Source: Department of Computer Science State University of New York, Stony Brook, NY 11794-4400, United States

Conference Title: 6th ACM Symposium on Solid Modeling and Applications

Conference Location: Ann Arbor, MI, United States Conference Date: 20010606-20010608

E.I. Conference No.: 58595

Source: Proceedings of the Symposium on Solid Modeling and Applications 2001. p 312-313

Publication Year: 2001

Language: English

**24/3/40 (Item 5 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05872462 E.I. No: EIP01336615305

**Title: Creation of freeform solid models in virtual reality**

Author: Leu, M.C.; Maitech, B.Y.; Blackmore, D.; Fu, L.

Corporate Source: University of Missouri-Rolla, Rolla, MO, United States

Source: CIRP Annals - Manufacturing Technology v 50 n 1 2001. p 73-76

Publication Year: 2001

CODEN: CIRAAT ISSN: 0007-8506

Language: English

**24/3/41 (Item 6 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05781304 E.I. No: EIP01025530247

**Title: Ray-based haptic rendering: Force and torque interactions between a line probe and 3D objects in virtual environments**

Author: Ho, Chih-Hao; Basdogan, Cagatay; Srinivasan, Mandayam A.

Corporate Source: Massachusetts Inst of Technology, Cambridge, MA, USA

Source: International Journal of Robotics Research v 19 n 7 Jul 2000. p 668-683

Publication Year: 2000

CODEN: IJRREL ISSN: 0278-3649

Language: English

**24/3/42 (Item 7 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05667475 E.I. No: EIP00105351584

**Title: Virtual reality moulds ceramics**

Author: Tinhnam, Brian

Source: Manufacturing Computer Solutions v 6 n 7 Jul 2000. p 1

Publication Year: 2000

CODEN: MCSOFD ISSN: 1358-1066

Language: English

**24/3/43 (Item 8 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05624590 E.I. No: EIP00085276162

**Title: Some current issues in haptics research**

Author: Hollerbach, John M.

Corporate Source: Univ of Utah, Salt Lake City, UT, USA

Conference Title: ICRA 2000: IEEE International Conference on Robotics and Automation

Conference Location: San Francisco, CA, USA Conference Date: 19000424-19000428

E.I. Conference No.: 57053

Source: Proceedings - IEEE International Conference on Robotics and Automation v 1 2000. IEEE, Piscataway, NJ, USA. p 757-762

Publication Year: 2000

CODEN: PIIAET ISSN: 1050-4729

Language: English

**24/3/44 (Item 9 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)  
(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05622617 E.I. No: EIP00085273711

**Title: Force-feedback improves performance for steering and combined steering-targeting tasks**

Author: Dennerlein, Jack Tigh; Martin, David B.; Hasser, Christopher  
Corporate Source: Harvard Univ, Boston, MA, USA  
Conference Title: CHI 2000 - Conference on Human Factors in Computing Systems 'The Future is Here'  
Conference Location: The Hague, Neth Conference Date: 19000401-19000405  
E.I. Conference No.: 57092  
Source: Conference on Human Factors in Computing Systems - Proceedings 2000. ACM, New York, NY, USA. p 423-429  
Publication Year: 2000  
CODEN: 002163  
Language: English

**24/3/45 (Item 10 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)  
(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05567771 E.I. No: EIP40055178982

**Title: Direct haptic rendering of complex trimmed NURBS models**

Author: Thompson, Thomas V. II; Cohen, Elaine  
Corporate Source: Univ of Utah, Salt Lake City, UT, USA  
Conference Title: Dynamic Systems and Control Division - 1999 (The ASME International Mechanical Engineering Congress and Exposition)  
Conference Location: Nashville, TN, USA Conference Date: 19991114-19991119  
E.I. Conference No.: 56775  
Source: American Society of Mechanical Engineers, Dynamic Systems and Control Division (Publication) DSC v 67 1999. p 109-116  
Publication Year: 1999  
CODEN: ASMDEV ISBN: 0-7918-1634-6  
Language: English

**24/3/46 (Item 11 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)  
(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05567770 E.I. No: EIP40055178981

**Title: Haptic rendering of surface-to-surface sculpted model interaction**

Author: Nelson, Donald D.; Johnson, David E.; Cohen, Elaine  
Corporate Source: Univ of Utah, Salt Lake City, UT, USA  
Conference Title: Dynamic Systems and Control Division - 1999 (The ASME International Mechanical Engineering Congress and Exposition)  
Conference Location: Nashville, TN, USA Conference Date: 19991114-19991119  
E.I. Conference No.: 56775  
Source: American Society of Mechanical Engineers, Dynamic Systems and Control Division (Publication) DSC v 67 1999. p 101-108  
Publication Year: 1999  
CODEN: ASMDEV ISBN: 0-7918-1634-6  
Language: English

**24/3/47 (Item 12 from file: 8)**

John Sims EIC 3700 308-4836



DIALOG(R)File 8: Ei Compendex(R)  
(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05383806 E.I. No: EIP99094775939

**Title:** Design of 3D haptic widgets

Author: Miller, Timothy; Zeleznik, Robert

Corporate Source: Brown Univ, Providence, RI, USA

Conference Title: Proceedings of the 1999 Symposium on Interactive 3D Graphics

Conference Location: Atlanta, GA, USA Conference Date: 19990426-19990428

E.I. Conference No.: 55446

Source: Proceedings of the Symposium on Interactive 3D Graphics 1999. p 97-102

Publication Year: 1999

CODEN: 002166

Language: English

**24/3/48 (Item 13 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05383602 E.I. No: EIP99104833334

**Title:** Mechatronic device for simulating push-buttons and knobs

Author: Allotta, B.; Colla, V.; Bioli, G.

Corporate Source: Scuola Superiore Sant'Anna, Pisa, Italy

Conference Title: Proceedings of the 1999 6th International Conference on Multimedia Computing and Systems - IEEE ICMCS'99

Conference Location: Florence, Italy Conference Date: 19990607-19990611

E.I. Conference No.: 55370

Source: International Conference on Multimedia Computing and Systems-Proceedings v 1 1999. p 636-642

Publication Year: 1999

CODEN: 002114

Language: English

**24/3/49 (Item 14 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05199079 E.I. No: EIP99014521589

**Title:** Improved method for haptic tracing of a sculptured surface

Author: Johnson, David E.; Cohen, Elaine

Corporate Source: Univ of Utah, Salt Lake City, UT, USA

Conference Title: Proceedings of the 1998 ASME International Mechanical Engineering Congress and Exposition

Conference Location: Anaheim, CA, USA Conference Date: 19981115-19981120

E.I. Conference No.: 49454

Source: Dynamic Systems and Control Division American Society of Mechanical Engineers, Dynamic Systems and Control Division (Publication) DSC v 64 1998. ASME, Fairfield, NJ, USA. p 243-248

Publication Year: 1998

CODEN: ASMDEV

Language: English

**24/3/50 (Item 15 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

John Sims EIC 3700 308-4836

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05101605 E.I. No: EIP98084348007

**Title:** Haptic display for object grasping and manipulating in virtual environment

Author: Maekawa, Hitoshi; Hollerbach, John M.

Corporate Source: Univ of Utah, Salt Lake City, UT, USA

Conference Title: Proceedings of the 1998 IEEE International Conference on Robotics and Automation. Part 3 (of 4)

Conference Location: Leuven, Belgium Conference Date: 19980516-19980520

E.I. Conference No.: 48824

Source: Proceedings - IEEE International Conference on Robotics and Automation v 3 1998. IEEE, Piscataway, NJ, USA, 98CH36146. p 2566-2573

Publication Year: 1998

CODEN: PIIAET ISSN: 1050-4729

Language: English

**24/3/51 (Item 16 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05010291 E.I. No: EIP98054180898

**Title:** Haptic feedback for virtual reality computer aided design

Author: Springer, Scott L.; Gadh, Rajit

Corporate Source: Univ of Wisconsin-Madison, Madison, WI, USA

Conference Title: Proceedings of the 1997 ASME International Mechanical Engineering Congress and Exposition

Conference Location: Dallas, TX, USA Conference Date: 19971116-19971121

E.I. Conference No.: 47756

Source: Concurrent Product Design and Environmentally Conscious Manufacturing American Society of Mechanical Engineers, Design Engineering Division (Publication) DE v 94 1997. ASME, Fairfield, NJ, USA. p 1-8

Publication Year: 1997

CODEN: AMEDEH

Language: English

**24/3/52 (Item 17 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05010290 E.I. No: EIP98054180740

**Title:** Proceedings of the 1997 ASME International Mechanical Engineering Congress and Exposition

Author: Billatos, S.B. (Ed.); Zhang, H.C. (Ed.)

Conference Title: Proceedings of the 1997 ASME International Mechanical Engineering Congress and Exposition

Conference Location: Dallas, TX, USA Conference Date: 19971116-19971121

E.I. Conference No.: 47756

Source: Concurrent Product Design and Environmentally Conscious Manufacturing American Society of Mechanical Engineers, Design Engineering Division (Publication) DE v 94 1997. ASME, Fairfield, NJ, USA. 295p

Publication Year: 1997

CODEN: AMEDEH

Language: English

**24/3/53 (Item 18 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

John Sims EIC 3700 308-4836

04792739 E.I. No: EIP97083790097

**Title: Challenge to design intelligent consumer and domestic product interfaces**

Author: Bonner, John V.H.

Corporate Source: Teesside Univ, Cleveland, UK

Conference Title: Proceedings of the 1996 IEE Colloquium on Artificial Intelligence in Consumer and Domestic Products

Conference Location: London, UK Conference Date: 19961022

E.I. Conference No.: 46868

Source: IEE Colloquium (Digest) n 212 1996. IEE, Stevenage, Engl. 4p

Publication Year: 1996

CODEN: DCILDN ISSN: 0963-3308

Language: English

**24/3/54 (Item 19 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

04761281 E.I. No: EIP97073740686

**Title: Direct haptic rendering of sculptured models**

Author: Thompson, Thomas V. II; Johnson, David E.; Cohen, Elaine

Corporate Source: Univ of Utah, Salt Lake City, UT, USA

Conference Title: Proceedings of the 1997 Symposium on Interactive 3D Graphics

Conference Location: Providence, RI, USA Conference Date: 19970427-19970430

E.I. Conference No.: 46661

Source: Proceedings of the Symposium on Interactive 3D Graphics 1997. ACM, New York, NY, USA. p 167-176

Publication Year: 1997

CODEN: 002166

Language: English

**24/3/55 (Item 20 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

04665392 E.I. No: EIP97043595435

**Title: Haptic display of visual images**

Author: Shi, Yunling; Pai, Dinesh K.

Corporate Source: Univ of British Columbia, Vancouver, BC, Can

Conference Title: Proceedings of the 1997 IEEE Virtual Reality Annual International Symposium

Conference Location: Albuquerque, NM, USA Conference Date: 19970301-19970305

E.I. Conference No.: 46227

Source: Proceedings - Virtual Reality Annual International Symposium 1997. IEEE, Los Alamitos, CA, USA, 97CB36033. p 188-191

Publication Year: 1997

CODEN: 85RWAC

Language: English

**24/3/56 (Item 21 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

04622055 E.I. No: EIP97023518779

John Sims EIC 3700 308-4836

**Title: Proceedings of the IEE Colloquium on Virtual Reality - User Issues**  
Author: Anon (Ed.)  
Conference Title: Proceedings of the IEE Colloquium on Virtual Reality - User Issues  
Conference Location: London, UK Conference Date: 19960325  
E.I. Conference No.: 45941  
Source: IEE Colloquium (Digest) n 068 1996.. var paging  
Publication Year: 1996  
CODEN: DCILDN  
Language: English

**24/3/57 (Item 22 from file: 8)**  
DIALOG(R)File 8: Ei Compendex(R)  
(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

04409486 E.I. No: EIP96053197284  
**Title: Tactile and kinesthetic feedback in virtual environments**  
Author: Taylor, Paul  
Corporate Source: Univ of Hull, Hull, Engl  
Source: Transactions of the Institute of Measurement and Control v 17 n 5  
1995. p 225-233  
Publication Year: 1995  
CODEN: TICODG ISSN: 0142-3312  
Language: English

**24/3/58 (Item 23 from file: 8)**  
DIALOG(R)File 8: Ei Compendex(R)  
(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

04281276 E.I. No: EIP95112912083  
**Title: Imposing motion constraints to a force reflecting telerobot through real-time simulation of a virtual mechanism**  
Author: Joly, Luc D.; Andriot, Claude  
Corporate Source: Commissariat a l'Energie Atomique (CEA), Fontenay-Aux-Roses, Fr  
Conference Title: Proceedings of the 1995 IEEE International Conference on Robotics and Automation. Part 1 (of 3)  
Conference Location: Nagoya, Jpn Conference Date: 19950521-19950527  
E.I. Conference No.: 43853  
Source: Proceedings - IEEE International Conference on Robotics and Automation v 1 1995. IEEE, Piscataway, NJ, USA, 95CB3461-1. p 357-362  
Publication Year: 1995  
CODEN: PIIAET ISSN: 1050-4729  
Language: English

**24/3/59 (Item 24 from file: 8)**  
DIALOG(R)File 8: Ei Compendex(R)  
(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

04034737 E.I. No: EIP95012506677  
**Title: Development of 3D-input device for virtual surface manipulation**  
Author: Yokoi, Hiroshi; Yamashita, Juli; Fukuji, Yukio; Shimojo, Makoto  
Corporate Source: Natl Inst of Bioscience and Human Technology, Tsukuba, Jpn  
Conference Title: Proceedings of the 3rd IEEE International Workshop on Robot and Human Communication  
Conference Location: Nagoya, USA Conference Date: 19940718-19940720  
E.I. Conference No.: 21527

Source: Robot and Human Communication - Proceedings of the IEEE International Workshop 1994. IEEE, Piscataway, NJ, USA, 94TH0679-1. p 134-139

Publication Year: 1994

CODEN: 001672

Language: English

**24/3/60 (Item 1 from file: 34)**

DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

(c) 2003 Inst for Sci Info. All rts. reserv.

09697987 Genuine Article#: 435NJ No. References: 4

**Title: Spatial data management for computer - aided design**

Author(s): Kriegel HP (REPRINT) ; Muller A; Potke M; Seidl T

Corporate Source: Univ Munich,Inst Comp Sci,D-80539 Munich//Germany/

(REPRINT); Univ Munich,Inst Comp Sci,D-80539 Munich//Germany/

Journal: SIGMOD RECORD, 2001 , V30, N2 (JUN), P614-614

ISSN: 0163-5808 Publication date: 20010600

Publisher: ASSOC COMPUTING MACHINERY, 1515 BROADWAY, NEW YORK, NY 10036 USA

Language: English Document Type: ARTICLE (ABSTRACT AVAILABLE)

**24/3/61 (Item 2 from file: 34)**

DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

(c) 2003 Inst for Sci Info. All rts. reserv.

08551311 Genuine Article#: 299RC No. References: 33

**Title: Molecular modelling and drug design**

Author(s): Meyer EF (REPRINT) ; Swanson SM; Williams JA

Corporate Source: TEXAS A&M UNIV,DEPT BIOCHEM & BIOPHYS, BIOG LAB/COLLEGE

STN//TX/77843 (REPRINT)

Journal: PHARMACOLOGY & THERAPEUTICS, 2000 , V85, N3 (MAR), P113-121

ISSN: 0163-7258 Publication date: 20000300

Publisher: PERGAMON-ELSEVIER SCIENCE LTD, THE BOULEVARD, LANGFORD LANE,

KIDLINGTON, OXFORD OX5 1GB, ENGLAND

Language: English Document Type: ARTICLE (ABSTRACT AVAILABLE)

**24/3/62 (Item 3 from file: 34)**

DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

(c) 2003 Inst for Sci Info. All rts. reserv.

05866511 Genuine Article#: XD072 No. References: 23

**Title: Experiments using multimodal virtual environments in design for assembly analysis**

Author(s): Gupta R (REPRINT) ; Sheridan T; Whitney D

Corporate Source: SCHLUMBERGER AUSTIN PROD CTR,GRAPH & MODELING GRP, 8311 N

FM 620 RD/AUSTIN//TX/78726 (REPRINT); MIT,/CAMBRIDGE//MA/02139

Journal: PRESENCE-TELEOPERATORS AND VIRTUAL ENVIRONMENTS, 1997 , V6, N3 (JUN), P318-338

ISSN: 1054-7460 Publication date: 19970600

Publisher: MIT PRESS, 55 HAYWARD ST JOURNALS DEPT, CAMBRIDGE, MA 02142

Language: English Document Type: ARTICLE (ABSTRACT AVAILABLE)

**24/3/63 (Item 4 from file: 34)**

DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

(c) 2003 Inst for Sci Info. All rts. reserv.

05192085    Genuine Article#: VG164    No. References: 13  
**Title: INTELLIGENT CONTROL FOR HAPTIC DISPLAYS**  
Author(s): MUNCH S; STANGENBERG M  
Corporate Source: UNIV KARLSRUHE, INST REAL TIME COMP SCI & ROBOT, KAISERSTR  
12/D-76128 KARLSRUHE//GERMANY/  
Journal: COMPUTER GRAPHICS FORUM, 1996 , V15, NSICI, PC217-C226  
ISSN: 0167-7055  
Language: ENGLISH    Document Type: ARTICLE    (Abstract Available)

24/3/64        (Item 5 from file: 34)  
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci  
(c) 2003 Inst for Sci Info. All rts. reserv.

04951108    Genuine Article#: UU863    No. References: 20  
**Title: THE ROLE OF MANUAL KINESTHESIS IN BUILDING AND IN USING MENTAL  
REPRESENTATIONS OF BIDIMENSIONAL OBJECTS**  
Author(s): GLOTON C; BELLAN D; POITOU JP  
Corporate Source: UNIV AIX MARSEILLE 1, CTR AIX, CNRS URA 182, CREPCO, 29 AV  
ROBERT SCHUMAN/F-13621 AIX PROVENCE//FRANCE/  
Journal: TRAVAIL HUMAIN, 1996 , V59, N2 (JUN), P137-153  
ISSN: 0041-1868  
Language: FRENCH    Document Type: ARTICLE    (Abstract Available)

24/3/65        (Item 1 from file: 155)  
DIALOG(R)File 155:MEDLINE(R)  
(c) format only 2003 The Dialog Corp. All rts. reserv.

09024428    20318130    PMID: 10977560  
**Interactive simulation of tooth cleaning with an interdental brush.**  
Salb T; Ghanai S; Burgert O; Dillmann R  
Universitat Karlsruhe (TH), Department for Computer Science, Germany.  
salb@ira.uka.de  
Studies in health technology and informatics (NETHERLANDS)    2000 , 70  
p295-301, ISSN 0926-9630    Journal Code: 9214582  
Document type: Journal Article  
Languages: ENGLISH  
Main Citation Owner: NLM  
Record type: Completed

24/3/66        (Item 2 from file: 155)  
DIALOG(R)File 155:MEDLINE(R)  
(c) format only 2003 The Dialog Corp. All rts. reserv.

09024403    20318105    PMID: 10977532  
**Modeling and modification of medical 3D objects. The benefit of using a  
haptic modeling tool.**  
Kling-Petersen T; Rydmark M  
Mednet, Goteborg, Sweden. kling@mednet.gu.se  
Studies in health technology and informatics (NETHERLANDS)    2000 , 70  
p162-7, ISSN 0926-9630    Journal Code: 9214582  
Document type: Journal Article  
Languages: ENGLISH  
Main Citation Owner: NLM  
Record type: Completed

17/7/1 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

4885397 INSPEC Abstract Number: A9506-8730C-002, C9504-7330-023

**Title: Influence of the shape of cardiac ventricles on the resultant heart vectors. A model study**

Author(s): Szathmary, V.

Author Affiliation: Inst. of Normal & Pathological Physiol., Slovak Acad. of Sci., Bratislava, Slovakia

p.237-40

Publisher: IEEE Comput. Soc. Press, Los Alamitos, CA, USA

Publication Date: 1993 Country of Publication: USA xxviii+911 pp.

ISBN: 0 8186 5470 8

U.S. Copyright Clearance Center Code: 0276-6547/93/\$3.00

Conference Title: Proceedings of Computers in Cardiology Conference

Conference Sponsor: IEEE

Conference Date: 5-8 Sept. 1993 Conference Location: London, UK

Language: English Document Type: Conference Paper (PA)

Treatment: Theoretical (T)

Abstract: The effect of different curvature of ventricular walls on the resultant **heart** vectors was studied by using an **interactive computer model** of propagated excitation. In this model, the geometry of ventricles is defined by parts of compound ellipsoids. During the series of model experiments the value of input parameter-relative ventricular curvature (RVC), determining the curvature of ventricular walls in apex-base direction, was varied from 0.45 to 1.0. Decrease of the RVC from 1.0 to 0.35 led to a slight decrease of initial vectors, an increase of laterally oriented vectors accompanied with their downwards deviation, as well as to a rapid decrease of the magnitude of terminal vectors along with their rotation to the left. The degree of these changes was indirectly proportional to the respective values of RVC. (3 Refs)

Subfile: A C

Copyright 1995, IEE

17/7/2 (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

00365690 INSPEC Abstract Number: B72011343, C72008144

**Title: Computer-aided medical instruction using an interactive graphics model of the normal and congenitally defective heart**

Author(s): Rupeiks, I.

Author Affiliation: Univ. California, Los Angeles, CA, USA

Journal: IEEE Transactions on Biomedical Engineering vol.BME-19, no.2 p.88-96

Publication Date: March 1972 Country of Publication: USA

CODEN: IEBEAX ISSN: 0018-9294

Language: English Document Type: Journal Paper (JP)

Treatment: Applications (A); Practical (P)

Abstract: The on-line **interactive** -graphics digital- **computer model** of the normal and congenitally defective **heart** was developed as a basic research and teaching tool. The **interactive** graphics capability of the simulation system provides the user great flexibility in selecting the types of defects he wishes to study, and in allowing him to progress at his own speed. A brief discussion of the interactive graphics system and the modelling equations for the normal heart and congenital defect options: ventricular septal defect, patent ductus arteriosus, valvular stenosis, and valvular incompetence (regurgitation), are included. (16 Refs)

Subfile: B C

17/7/3 (Item 1 from file: 5)  
DIALOG(R)File 5: Biosis Previews(R)  
(c) 2003 BIOSIS. All rts. reserv.

09645139 BIOSIS NO.: 199598100057

**Interactive multimedia for prenatal ultrasound training.**

AUTHOR: Lee Wesley(a); Ault Heather; Kirk Janet S; Comstock Christine H

AUTHOR ADDRESS: (a)Div. Fetal Imaging, William Beaumont Hosp., 3601 West

Thirteen Mile Rd., Royal Oak, MI 48073\*\*USA

JOURNAL: Obstetrics & Gynecology 85 (1):p135-140 1995

ISSN: 0029-7844

DOCUMENT TYPE: Article

RECORD TYPE: Abstract

LANGUAGE: English

ABSTRACT: This demonstration project examines the utility of interactive multimedia for prenatal ultrasound training. A laser-disc library was linked to a three-dimensional (3-D) **heart model** and other **computer**-based training materials through **interactive** multimedia. A testing module presented ultrasound anomalies and related questions to house-staff physicians through the image library. Users were asked to evaluate these training materials on the basis of perceived instructional value, question content, subjects covered, graphics interface, and ease of use; users were also asked for their comments. House-staff physicians indicated that they consider interactive multimedia to be a helpful adjunct to their core fetal imaging rotation. During a 9-month period, 16 house-staff physicians correctly diagnosed 78 +/- 4% of unknown cases presented through the testing module. The 3-D heart model was also perceived to be a useful teaching aid for spatial orientation skills. Our findings suggest that interactive multimedia and volume visualization models can be used to supplement traditional prenatal ultrasound training. The system provides a broad exposure to ultrasound anomalies, increases opportunities for postnatal correlation, emphasizes motion video for ultrasound training, encourages development of independent diagnostic ability, and helps physicians understand anatomic orientation. We hypothesize that interactive multimedia-based tutorials provide a better overall training experience for house-staff physicians. However, these supplementary methods will require formal evaluation of effectiveness to better understand their potential educational impact.

17/7/4 (Item 2 from file: 5)  
DIALOG(R)File 5: Biosis Previews(R)  
(c) 2003 BIOSIS. All rts. reserv.

07601865 BIOSIS NO.: 000040113359

**COMPUTER MODEL IN INTRA-CARDIAC CONDUCTION AND HEART -PACEMAKER**

**INTERACTION AN INTERACTIVE EDUCATIONAL VERSION**

AUTHOR: MALIK M; AVIES D W; CAMM A J

AUTHOR ADDRESS: DEP. CARDIOLOGICAL SCI., ST. GEORGE'S HOSP. MED. SCH.,  
LONDON, ENGL.

JOURNAL: AMERICAN COLLEGE OF CARDIOLOGY 40TH ANNUAL SCIENTIFIC SESSION,  
ATLANTA, GEORGIA, USA, MARCH 3-7, 1991. J AM COLL CARDIOL 17 (2 SUPPL. A).  
1991. 9A. 1991

CODEN: JACCD

DOCUMENT TYPE: Meeting

RECORD TYPE: Citation

LANGUAGE: ENGLISH

John Sims EIC 3700 308-4836



17/7/5 (Item 1 from file: 6)  
DIALOG(R)File 6:NTIS  
(c) 2003 NTIS, Intl Cpyrght All Rights Res. All rts. reserv.

0387605 NTIS Accession Number: AD-762 020/XAB

**A Computer Graphics Approach for Understanding Prosthetic Heart Valve Characteristics**

Au, A. D. K.  
Utah Univ Salt Lake City Computer Science Div  
Corp. Source Codes: 404949  
Report No.: UTEC-CSC-72-118  
Jun 72 77p  
Journal Announcement: GRAI7315  
Sponsored in part by Advanced Research Projects Agency, Arlington, Va.  
Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)321-8547; and email at orders@ntis.fedworld.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

NTIS Prices: PC A05/MF A01  
Contract No.: F30602-70-C-0300

Fluid dynamics principles and numerical analysis techniques are applied in a study of stress distribution in blood caused by the motion of the occluder within the cage of a prosthetic heart valve. The complete Navier-Stokes equations are solved to obtain the solutions of the flow for a two dimensional heart valve model. An interactive computer graphics program is developed for the simulation of the flow process and the pictorial representation of the solution for analysis. Resulting graphics displays show the stress distributions and other flow parameters which describe the movement of a disc occluder from full-closed position to an almost full-open position. The possible contributions of this study to the understanding of hemolysis and thrombosis associated with prosthetic heart valves are discussed. (Author)

17/7/6 (Item 1 from file: 34)  
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci  
(c) 2003 Inst for Sci Info. All rts. reserv.

10525107 Genuine Article#: 538GQ Number of References: 6

**Title: A different kind of "total artificial heart": The interactive , computer -based human heart model**

Author(s): Pasque MK (REPRINT)

Corporate Source: Washington Univ, Sch Med, Div Cardiothorac Surg, Dept Surg, Suite 3103 Queeny Tower, 1 Barnes Jewish Hosp Plaz/St Louis//MO/63110 (REPRINT); Washington Univ, Sch Med, Div Cardiothorac Surg, Dept Surg, St Louis//MO/63110

Journal: ANNALS OF THORACIC SURGERY, 2002, V73, N4 (APR), P1032-1034

ISSN: 0003-4975 Publication date: 20020400

Publisher: ELSEVIER SCIENCE INC, 655 AVENUE OF THE AMERICAS, NEW YORK, NY 10010 USA

Language: English Document Type: EDITORIAL MATERIAL

?

22/7/3 (Item 1 from file: 73)  
DIALOG(R)File 73:EMBASE  
(c) 2003 Elsevier Science B.V. All rts. reserv.

12074644 EMBASE No: 2003186101

**Use of three-dimensional computer graphic animation to illustrate cleft lip and palate surgery**

Cutting C.B.; Oliker A.; Haring J.; Dayan J.; Smith D.  
Dr. C.B. Cutting, New York University Medical Center, Inst. of Reconstr.  
Plastic Surgery, 333 East 34th Street, New York, NY United States  
AUTHOR EMAIL: court.cutting@med.nyu.edu  
Computer Aided Surgery ( COMPUT. AIDED SURG. ) (United States) 2002,  
7/6 (326-331)  
CODEN: CAISF ISSN: 1092-9088  
DOCUMENT TYPE: Journal ; Article  
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH  
NUMBER OF REFERENCES: 42

Objective: Three-dimensional (3D) computer animation is not commonly used to illustrate surgical techniques. This article describes the surgery-specific processes that were required to produce animations to teach cleft lip and palate surgery. Materials and Methods: Three-dimensional models were created using CT scans of two Chinese children with unrepaired clefts (one unilateral and one bilateral). We programmed several custom software tools, including an incision tool, a forceps tool, and a fat tool. Results: Three-dimensional animation was found to be particularly useful for illustrating surgical concepts. Positioning the virtual "camera" made it possible to view the anatomy from angles that are impossible to obtain with a real camera. Transparency allows the underlying anatomy to be seen during surgical repair while maintaining a view of the overlaying tissue relationships. Finally, the representation of motion allows modeling of anatomical mechanics that cannot be done with static illustrations. The animations presented in this article can be viewed on-line at <http://www.smiletrain.org/programs/virtual-surgery2.htm>. Conclusions: Sophisticated surgical procedures are clarified with the use of 3D animation software and customized software tools. The next step in the development of this technology is the creation of interactive **simulators** that recreate the experience of surgery in a safe, digital environment. (c) 2003 Wiley-Liss, Inc.

22/7/4 (Item 2 from file: 73)  
DIALOG(R)File 73:EMBASE  
(c) 2003 Elsevier Science B.V. All rts. reserv.

11827708 EMBASE No: 2002400234

**Measurements and modelling of the compliance of human and porcine organs**

Carter F.J.; Frank T.G.; Davies P.J.; McLean D.; Cuschieri A.  
F.J. Carter, Dept. of Surgery/Molecular Oncology, Ninewells  
Hospital/Medical School, Dundee DD1 9SY United Kingdom  
AUTHOR EMAIL: f.j.carter@dundee.ac.uk  
Medical Image Analysis ( MED. IMAGE ANAL. ) (United Kingdom) 2001, 5/4  
(231-236)  
CODEN: MIAEC ISSN: 1361-8415  
PUBLISHER ITEM IDENTIFIER: S1361841501000482  
DOCUMENT TYPE: Journal ; Article  
LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH  
NUMBER OF REFERENCES: 13

Stress-strain data obtained from animal and human tissue have several

applications including medical diagnosis, assisting in surgical instrument design and the production of realistic computer-based **simulators** for training in minimal access surgery. Such data may also be useful for corroborating mathematical models of tissue response. This paper presents data obtained from ex-vivo and in-vivo tissue indentation tests using a small indenter that is similar to instruments used in minimal access surgery. In addition, uniform stress tests provide basic material property data, via an exponential stress-strain law, to allow a finite element method to be used to predict the response for the non-uniform stresses produced by the small indenter. Data are obtained from harvested pig liver and spleen using a static compliance probe. Data for human liver are obtained from volunteer patients, undergoing minor open surgery, using a sterile hand-held compliance probe. All the results demonstrate highly non-linear stress-strain behaviour. Pig spleen is shown to be much more compliant than pig liver with mean elastic moduli of 0.11 and 4.0 MPa respectively. The right lobe of human liver had a mean elastic modulus of about 0.27 MPa. However, a single case of a diseased liver had a mean modulus of 0.74 MPa - nearly three times the stiffness. It was found that an exponential stress-strain law could accurately fit uniform stress test data and that subsequent finite element modelling for non-uniform stress around a small indenter matched measured force characteristics (c) 2001 Elsevier Science B.V. All rights reserved.

22/7/5 (Item 1 from file: 155)  
DIALOG(R) File 155:MEDLINE(R)  
(c) format only 2003 The Dialog Corp. All rts. reserv.

11629318 99062856 PMID: 9846426

**[Biomechanical modeling of instrumentation for the scoliotic spine using flexible elements: a feasibility study]**

Modélisation biomécanique de l'instrumentation du rachis scoliotique à l'aide de mécanismes flexibles: étude de faisabilité.

Poulin F; Aubin C E; Stokes I A; Gardner-Morse M; Labelle H

Centre de Recherche, l'Hôpital Sainte-Justine, Montréal, Québec, Canada.

Annales de chirurgie (FRANCE) 1998, 52 (8) p761-7, ISSN 0003-3944

Journal Code: 0140722

Document type: Journal Article ; English Abstract

Languages: FRENCH

Main Citation Owner: NLM

Record type: Completed

Surgical instrumentation of the scoliotic spine is a complex procedure with many parameters, such as the spinal segment to operate on, the number and position of the hooks and screws, etc. Biomechanical modeling is a tool which can be used to determine the influence of these parameters. However, technical difficulties due to the large stiffness range of involved components and the large deformations associated with surgical maneuvers are encountered when using the finite elements method. Thus, the objective of this study is to adapt a modeling approach using analysis of flexible mechanisms and evaluate its feasibility. The model combines rigid bodies for the vertebrae and flexible elements representing intervertebral structures. The mechanical properties were calculated from published data and the geometry was personalized with intraoperative measurements. Following the installation of the hooks and screws on the modeled spine, two steps were used to **simulate** the surgical maneuvers: 1) translation and attachment of the hooks/screws on the first rod; 2) rod rotation. The feasibility of this modeling approach was evaluated by **simulating** the surgical maneuvers on 2 cases: 1) a physical model; 2) a clinical case. The agreement between intraoperative measurements and **simulation** results (frontal curvatures are reproduced with over 80% accuracy) shows the feasibility of the modeling approach. This approach also reduces

computational convergence problems because of its limited sensitivity to stiffness differences between elements, which demonstrates the advantage of flexible mechanism modeling relative to finite element modeling. Long term goals of subsequent refinements are the development of a tool for surgical correction predictions and for the design of more efficient instrumentation.

Record Date Created: 19981223

Record Date Completed: 19981223

22/7/6 (Item 2 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

(c) format only 2003 The Dialog Corp. All rts. reserv.

10217179 96018371 PMID: 7554835

**Ophthalmic microsurgical robot and associated virtual environment.**

Hunter I W; Jones L A; Sagar M A; Lafontaine S R; Hunter P J

Department of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge 02139, USA.

Computers in biology and medicine (UNITED STATES) Mar 1995, 25 (2)

p173-82, ISSN 0010-4825 Journal Code: 1250250

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

An ophthalmic virtual environment has been developed as part of a teleoperated microsurgical robot built to perform surgery on the eye. The virtual environment is unique in that it incorporates a detailed continuum model of the anatomical structures of the eye, its mechanics and optical properties, together with a less detailed geometric-mechanical model of the face. In addition to providing a realistic visual display of the eye being operated on, the virtual environment **simulates** tissue properties during manipulation and cutting and the forces involved are determined by solving a mechanical finite element model of the tissue. These forces are then fed back to the operator via a force reflecting master and so the surgeon can experience both the visual and mechanical sensations associated with performing surgery. The virtual environment can be used to enhance the images produced by the camera on the microsurgical slave robot during surgery and as a surgical **simulator** in which it replaces these images with computer graphics generated from the eye model.

Record Date Created: 19951030

Record Date Completed: 19951030

?

28/3,AB/1 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

7403916 INSPEC Abstract Number: C2002-11-7330-281

**Title: Training and assessment of laparoscopic skills using a haptic simulator**

Author(s): Rolfsson, G.; Nordgren, A.; Bindzau, S.; Hagstrom, J.-P.; McLaughlin, J.; Thurffjell, L.

Author Affiliation: Reachin Technol. AB, Stockholm, Sweden

Conference Title: Medicine Meets Virtual Reality 02/10. Digital Upgrades: Applying Moore's Law to Health p.409-11

Editor(s): Westwood, J.D.; Hoffman, H.M.; Robb, R.A.; Stredney, D.

Publisher: IOS Press, Amsterdam, Netherlands

Publication Date: 2002 Country of Publication: Netherlands xii+600 pp.

ISBN: 1 58603 203 8 Material Identity Number: XX-2002-01963

Conference Title: Medicine Meets Virtual Reality 02/10. Digital Upgrades: Applying Moore's Law to Health

Conference Date: 23-26 Jan. 2002 Conference Location: Newport Beach, CA, USA

Language: English

Abstract: Surgical **simulation** is a promising technique for training of laparoscopic surgery. **Computer** based **simulation** provides not only a cost effective alternative to traditional training but also a way to assess the surgeons performance. We present a haptic **simulator** that allows for training and assessment of basic laparoscopic skills. The skills trained are **modeled** around a cholecystectomy procedure and include bi-manual dissection, clips setting, catheter insertion and cutting. The system uses accurate anatomic **models** of the organs involved in the procedure. This combined with effective methods for soft tissue deformation and haptic feedback, giving the surgeon a precise feeling of the interaction between organs and **surgical instruments**, provides a realistic training environment. The system has been **designed** with procedural training in mind and by putting together the individual tasks it will be possible to train in performing a complete cholecystectomy procedure.

Subfile: C

Copyright 2002, IEE

28/3,AB/2 (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6495284 INSPEC Abstract Number: C2000-03-7330-252

**Title: A PC-based surgical simulator for laparoscopic surgery**

Author(s): Tseng, C.S.; Lee, Y.Y.; Chan, Y.P.; Wu, S.S.; Chiu, A.W.

Author Affiliation: Dept. of Mech. Eng., Nat. Central Univ., Chung-Li, Taiwan

Conference Title: Medicine Meets Virtual Reality. Art, Science, Technology: Healthcare (R)Evolution. Proceedings of Medicine Meets Virtual Reality 6 p.155-60

Editor(s): Westwood, J.D.; Hoffman, H.M.; Stredney, D.; Weghorst, S.J.

Publisher: IOS Press, Amsterdam, Netherlands

Publication Date: 1998 Country of Publication: Netherlands xv+409 pp.

ISBN: 90 5199 386 2 Material Identity Number: XX-1998-00838

Conference Title: Proceedings of Medicine Meets Virtual Reality

Conference Date: 28-31 Jan. 1998 Conference Location: San Diego, CA, USA

Language: English

**Abstract:** Surgical **simulators** for minimally invasive surgery have been developed in the 1990s. Most of them use high-end UNIX workstations for real-time **simulation** of complex human organ **models**. Only a few of them have input devices with force feedback. Recently, personal **computer** technologies have made the real-time display of relatively complex **models** feasible. We are developing an Intel-based laparoscopic surgical **simulator** that provides near-real-time intuitive interaction between the trainee and the **simulated models** of the human organs. The surgical **simulator** has a prototypical scenario of cholecystectomy surgery. It can interactively **simulate** the deformation and cutting of cystic ducts and veins. In addition, a set of input devices with force feedback has been **designed** and tested to imitate the manipulation of **surgical instruments**. The input **device** has five degrees of freedom, and three of them are driven by DC motors to produce force feedback.

Subfile: C

Copyright 2000, IEE

28/3,AB/3 (Item 3 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

5184389 INSPEC Abstract Number: A9606-8770G-003, B9603-7520-010,  
C9603-7330-140

**Title: 3D modelling for computer-assisted neurosurgical procedures**

Author(s): Krishnan, S.M.; Wang, J.T.; Cao, G.

Author Affiliation: Sch. of Electr. & Electron. Eng., Nanyang Technol. Univ., Singapore

Journal: Biomedical Engineering, Applications Basis Communications  
vol.7, no.5 p.481-5

Publisher: Biomed. Eng. Soc. Republic of China,

Publication Date: 25 Oct. 1995 Country of Publication: Taiwan

CODEN: YIGOE0 ISSN: 1016-2356

SICI: 1016-2356(19951025)7:5L:481:MCAN;1-H

Material Identity Number: B351-95006

Language: English

**Abstract:** Three dimensional **modelling** and **simulation** can be applied to complex neurosurgical procedures for enhanced visualization and understanding of abnormal areas requiring surgical intervention and planned interventional paths. This paper presents a simple approach to 3D **modelling** for **computer**-assisted stereotactic neurosurgery. The proposed approach starts with display of 2D CT/MR scan data obtained from conventional imaging systems and provides for storing the data in an efficient format. Image processing techniques are then employed with necessary and appropriate interactive manipulation. The displayed scene consists of brain as well as the trajectory of the **surgical instruments** for stereotactic neurosurgery. Interactive determination of the optimal path of the neurosurgical instruments to access a tumor is achieved by diligently considering avoidance of highly sensitive and critical areas in the brain, and by applying pyramical **modelling** of the unsafe region. The algorithm and software associated with the proposed approach for neurosurgery have been **designed** and implemented on a 486 PC in a windows environment. The system has been tested to **simulate** interactive planning of interventional path for accessing a brain tumor. The low cost and simplicity in **design** lead support to refine the system to overcome platform related computational constraints. In conclusion, the 3D **modelling** plays a role as useful tool in better understanding and planning of surgical procedures.

Subfile: A B C

Copyright 1996, IEE

28/3,AB/4 (Item 4 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

03711562 INSPEC Abstract Number: B90066180, C90060299

**Title: Computer technology for prosthesis production**

Journal: IBM Nachrichten vol.40, no.300 p.36-9

Publication Date: March 1990 Country of Publication: West Germany

CODEN: IBMNAQ ISSN: 0018-8662

Language: German

Abstract: Describes the **computer** -aided **design** functions in the German 'AESCULAP' factory producing **surgical instruments** and implants. Details are given of the **design** of hip joints. The production of accurate implants avoids the need for cement corrections, which have a relatively limited life. The process employed is termed '3C' ( **computerized** tomography, CAD, and **computer** -aided **manufacture** ). Implants can be **simulated** and CAD aids are provided for the orthopaedic surgeon to experiment on **models** , before surgery is carried out.

Subfile: B C

28/3,AB/5 (Item 5 from file: 2)  
DIALOG(R)File 2:INSPEC  
(c) 2003 Institution of Electrical Engineers. All rts. reserv.

02493648 INSPEC Abstract Number: C85038683

**Title: Computer-aided manufacturing of bone models from computer tomography data for use in orthopedic surgery**

Author(s): Giebel, G.; Mildenstein, K.; Reumann, K.

Author Affiliation: Unfallchirurgische Klinik, Medizinischen Hochschule Hannover, West Germany

Journal: Biomedizinische Technik vol.30, no.5 p.111-14

Publication Date: May 1985 Country of Publication: West Germany

CODEN: BMZTA7 ISSN: 0013-5585

Language: German

Abstract: **Computer** -aided **manufacturing** of bone **models** from **computer** tomography data is described. These bone **models** represent three-dimensional life-size copies of human bone. The material used can be worked with the usual **surgical instruments** . Operations can therefore be **simulated** on the **model** , for example osteotomies, before being done in the patient.

Subfile: C

28/3,AB/6 (Item 1 from file: 5)  
DIALOG(R)File 5:Biosis Previews(R)  
(c) 2003 BIOSIS. All rts. reserv.

14114543 BIOSIS NO.: 200300108572

**BISTM XP Platform Decreases Electrocautery Artifact and BISTM Blanking during Bispectral IndexTM Monitoring.**

AUTHOR: Mathews Donald M(a); Shambroom John R(a); Ghori Khurram M(a); Phan Minh T(a); Neuman George G(a)

AUTHOR ADDRESS: (a)Anesthesiology, St Vincents Catholic Medical Center- St Vincent's Manhattan, New York, NY, USA\*\*USA

JOURNAL: Anesthesiology Abstracts of Scientific Papers Annual Meeting (2002 ):pAbstract No A-550 2002

MEDIUM: cd-rom

CONFERENCE/MEETING: 2002 Annual Meeting of the American Society of  
Anesthesiologists Orlando, FL, USA October 12-16, 2002  
SPONSOR: American Society of Anesthesiologists Inc.  
RECORD TYPE: Abstract  
LANGUAGE: English

**ABSTRACT:** The Bispectral Index™ (BISTM) Monitor ( **Model** A-2000, Aspect Medical Systems, Newton, MA) utilizes an EEG derived algorithm to generate the Bispectral Index™. With the traditional BISTM **device**, **surgical** electrocautery (EC) overwhelms the EEG signal and the epoch is rejected as artifactual. The BISTM XP platform features hardware and software changes **designed** to improve the utility of the monitor during EC usage. Specifically, the digital signal converter (DSC) has been redesigned to detect the onset of EC usage and to employ a filtering algorithm that extracts the underlying EEG signal and allows the continued calculation of the BISTM index. This study was undertaken to compare the effects of EC on indices of BISTM performance between the traditional and XP system. **Methods:** Following IRB approval 30 patients were monitored with a BISTM XP platform (A-2000 monitor, DSC-XP, BISTM rev. 4.0 software, BISTM Quattro Sensor, Aspect Medical Systems). EC was utilized as per the surgeon's usual practice. The grounding pad was placed under the patient's torso. The BISTM QUATRO sensor was placed according to **manufacturer** recommendations. Lead impedances were maintained below 15 Kohm, and were typically 5 Kohm. BISTM data and the raw EEG were continuously downloaded into a recording **computer**. The recordings were post-processed by two methods on a second-by-second basis. XP data were extracted directly from the recorded data, determining the presence of EC use, BISTM blanking and BISTM hollowing. The standard system (A-2000 monitor, DSC-2, BISTM rev. 3.4 software, BISTM Sensor) was **simulated** by utilizing the EC detection provided by the DSC-XP to analyze each second for the presence of EC; those seconds containing EC were considered artifactual and BISTM blanking and hollowing were determined with BISTM rev. 3.4 Signal Quality Index (SQI) parameters. The percentage of time determined to be blank, hollow and solid for each platform was compared with paired t testing. The regression lines of percentage of EC use vs. percentage of time blank or hollow were compared with the F value for overall test of coincidence between two lines. Population data between the two groups was compared with the Z-test for a proportion. P of <0.05 was considered significant. **Results:** Significantly fewer patients had BISTM blanking with the XP system compared to the traditional BISTM (p<0.05). There were significant differences in BISTM blanking, hollowing and presentation of solid data when the **simulated** standard A-2000 data were compared to the XP data (p<0.05, 0.005, 0.001, respectively). The regression lines of percentage of EC use vs. percentage of BISTM blanking and hollowing for each platform are presented in the figure. The overall test of coincidence between the regression lines were both significantly different (p<0.0001). **Discussion:** The changes in hardware and software in the BISTM XP platform, compared to the traditional BISTM platform, decreased the amount of BISTM blanking and hollowing and increased the time that a solid number was presented during routine clinical care using EC. Blanking and hollowing were significantly decreased by 77 % and 67%, respectively, which resulted in solid index being generated 97.9 % of the time, a 71% improvement. This indicates that the XP platform increases the utility of the monitor during cases in which EC is utilized.

2002

28/3,AB/7 (Item 1 from file: 34)

John Sims EIC 3700 308-4836



DIALOG(R)File 34:SciSearch(R) Cited Ref Sci  
(c) 2003 Inst for Sci Info. All rts. reserv.

10234953 Genuine Article#: 500NC Number of References: 12

**Title: Measurements and modelling of the compliance of human and porcine organs** (ABSTRACT AVAILABLE)

Author(s): Carter FJ (REPRINT) ; Frank TG; Davies PJ; McLean D; Cuschieri A  
Corporate Source: Univ Dundee, Ninewells Hosp & Med Sch, Dept Surg & Mol  
Oncol, Level 6/Dundee DD1 9SY//Scotland/ (REPRINT); Univ  
Dundee, Ninewells Hosp & Med Sch, Dept Surg & Mol Oncol, Dundee DD1  
9SY//Scotland/

Journal: MEDICAL IMAGE ANALYSIS, 2001, V5, N4 (DEC), P231-236

ISSN: 1361-8415 Publication date: 20011200

Publisher: ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS

Language: English Document Type: ARTICLE

Abstract: Stress-strain data obtained from animal and human tissue have several applications including medical diagnosis, assisting in surgical instrument **design** and the production of realistic **computer**-based **simulators** for training in minimal access surgery. Such data may also be useful for corroborating mathematical **models** of tissue response. This paper presents data obtained from ex-vivo and in-vivo tissue indentation tests using a small indenter that is similar to instruments used in minimal access surgery. In addition, uniform stress tests provide basic material property data, via an exponential stress-strain law, to allow a finite element method to be used to predict the response for the non-uniform stresses produced by the small indenter. Data are obtained from harvested pig liver and spleen using a static compliance probe. Data for human liver are obtained from volunteer patients, undergoing minor open surgery, using a sterile hand-held compliance probe. All the results demonstrate highly non-linear stress-strain behaviour. Pig spleen is shown to be much more compliant than pig liver with mean elastic moduli of 0.11 and 4.0 MPa respectively. The right lobe of human liver had a mean elastic modulus of about 0.27 MPa. However, a single case of a diseased liver had a mean modulus of 0.74 MPa - nearly three times the stiffness. It was found that an exponential stress-strain law could accurately fit uniform stress test data and that subsequent finite element **modelling** for non-uniform stress around a small indenter matched measured force characteristics. (C) 2001 Elsevier Science B.V. All rights reserved.

28/3,AB/8 (Item 2 from file: 34)

DIALOG(R)File 34:SciSearch(R) Cited Ref Sci  
(c) 2003 Inst for Sci Info. All rts. reserv.

07847729 Genuine Article#: 213TH Number of References: 17

**Title: The scientific ground of virtual endoscopy** (ABSTRACT AVAILABLE)

Author(s): Coatrieux JL (REPRINT)

Corporate Source: UNIV RENNES 1, INSERM, LAB TRAITEMENT SIGNAL & IMAGE,  
CAMPUS BEAULIEU/F-35042 RENNES//FRANCE/ (REPRINT)

Journal: BULLETIN DE L ACADEMIE NATIONALE DE MEDECINE, 1999, V183, N3, P  
455-464

ISSN: 0001-4079 Publication date: 19990000

Publisher: ACADEMIE NATL DE MEDECINE, 16 RUE BONAPARTE, 75272 PARIS 06,  
FRANCE

Language: French Document Type: ARTICLE

Abstract: The recent advances in medical imaging, the availability of methods for image analysis and **computer** graphics, the technological resources provided by microdevices and the **design** of minimal access surgical procedures have open the road to new concepts. Virtual

endoscopy represents one of these emerging areas and points out the applicative potential of three dimensional (3D) imaging. It leads to less invasive diagnosis and therapeutic achievements and provides important cues for education and interventional planning. Image segmentation, visualization, tissue **modeling** and interactions with **surgical instruments** are the fundamental components to build clinical applications. They are examined in this paper through 3D navigation systems, surgical **simulations** and image guided interventions.

28/3,AB/9 (Item 3 from file: 34)  
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci  
(c) 2003 Inst for Sci Info. All rts. reserv.

00742621 Genuine Article#: ET233 Number of References: 25  
**Title: RANGE OF MOTION IN TOTAL KNEE ARTHROPLASTY - A COMPUTER-ANALYSIS** (Abstract Available)  
Author(s): WALKER PS; GARG A  
Corporate Source: ROYAL NATL ORTHOPAED HOSP, INST ORTHOPAED, DEPT BIOMED ENGN, BROCKLEY HILL/STANMORE HA7 4LP/MIDDX/ENGLAND/; UNIV COLL & MIDDLESEX HOSP SCH MED, INST ORTHOPAED BIOMED ENGN/STANMORE/MIDDX/ENGLAND/; BRIGHAM & WOMENS HOSP, DEPT ORTHOPAED BIOMECH/BOSTON//MA/02115; MIT, DEPT MECH ENGN/CAMBRIDGE//MA/02139  
Journal: CLINICAL ORTHOPAEDICS AND RELATED RESEARCH, 1991, N262, P227-235  
Language: ENGLISH Document Type: ARTICLE  
Abstract: A three-dimensional **computer model** of the knee was formulated based on sectional and coordinate data from knee specimens. The **model** was consistent with published data in terms of contact points and ligament length patterns. Prosthetic components were **designed**, and surgical placement was **simulated**. Maximum flexion was limited by tension in the posterior cruciate ligament. Increased dishing of the tibial surface reduced flexion, but some dishing was considered necessary for reduction of contact stresses. Anteroposterior translation of the tibial component had little effect on flexion. Femoral translation had some offset, and posterior positioning reduced flexion. The most important surgical variable was tibial component tilt in the sagittal plane. Posterior tilt increased motion, while anterior tilt decreased motion. The results apply to the choice of total knee system, **instrument design**, and **surgical technique**.

28/3,AB/10 (Item 1 from file: 73)  
DIALOG(R)File 73:EMBASE  
(c) 2003 Elsevier Science B.V. All rts. reserv.

02896489 EMBASE No: 1985140448  
**Computer aided manufacturing of bone models from computer tomography data for use in orthopedic surgery**  
DREIDIMENSIONALE KNOCHENMODELLE NACH COMPUTERTOMOGRAPHIE-DATEN. COMPUTER-**DESIGN** UND COMPUTER-FERTIGUNG ZUR OPERATIONSPLANUNG IN CHIRURGIE UND ORTHOPADIE  
Mildenstein K.; Giebel G.; Reumann K.  
Unfallchirurgische Klinik, Medizinische Hochschule, D-3000 Hannover Germany  
Fortschritte der Medizin ( FORTSCHR. MED. ) (Germany) 1985, 103/13 (331-334)  
CODEN: FMDZA  
DOCUMENT TYPE: Journal  
LANGUAGE: GERMAN SUMMARY LANGUAGE: ENGLISH

**Computer** aided **manufacturing** of bone **models** from **computer** tomography data is described. These bone **models** represent three dimensional life size copies of human bone. The material used allows one to employ the usual **surgical instruments**. Operations therefore can be **simulated** on the **model** (for example osteotomies) and afterwards transferred to the patient.

28/3,AB/11 (Item 1 from file: 155)  
DIALOG(R) File 155:MEDLINE(R)  
(c) format only 2003 The Dialog Corp. All rts. reserv.

11922766 99366331 PMID: 10437278

**[The scientific bases of virtual endoscopy]**

Les bases scientifiques de l'endoscopie virtuelle.

Coatrieux J L

Laboratoire Traitement du Signal et de l'Image, INSERM, Universite de Rennes 1.

Bulletin de l'Academie nationale de medecine (FRANCE) 1999, 183 (3)  
p455-64, ISSN 0001-4079 Journal Code: 7503383

Document type: Journal Article; Review; Review, Tutorial ; English Abstract

Languages: FRENCH

Main Citation Owner: NLM

Record type: Completed

The recent advances in medical imaging, the availability of methods for image analysis and **computer** graphics, the technological resources provided by microdevices and the **design** of minimal access surgical procedures have open the road to new concepts. Virtual endoscopy represents one of these emerging areas and points out the applicative potential of three dimensional (3D) imaging. It leads to less invasive diagnosis and therapeutic achievements and provides important cues for education and interventional planning. Image segmentation, visualization, tissue **modeling** and interactions with **surgical instruments** are the fundamental components to build clinical applications. They are examined in this paper through 3D navigation systems, surgical **simulations** and image guided interventions.

28/3,AB/12 (Item 2 from file: 155)  
DIALOG(R) File 155:MEDLINE(R)  
(c) format only 2003 The Dialog Corp. All rts. reserv.

10131018 22108726 PMID: 12114176

**Interactive computer simulations of knee-replacement surgery.**

Gunther Stephen B; Soto Gabriel E; Colman William W

University of California, San Francisco, 94115-1351, USA.

Academic medicine - journal of the Association of American Medical Colleges (United States) Jul 2002, 77 (7) p753-4, ISSN 1040-2446  
Journal Code: 8904605

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

OBJECTIVE: Current surgical training programs in the United States are based on an apprenticeship **model**. This **model** is outdated because it does not provide conceptual scaffolding, promote collaborative learning, or offer constructive reinforcement. Our objective was to create a more useful approach by preparing students and residents for operative cases using

interactive **computer simulations** of surgery. Total-knee-replacement surgery (TKR) is an ideal procedure to **model** on the **computer** because there is a systematic protocol for the procedure. Also, this protocol is difficult to learn by the apprenticeship **model** because of the multiple instruments that must be used in a specific order. We **designed** an interactive **computer** tutorial to teach medical students and residents how to perform knee-replacement surgery. We also aimed to reinforce the specific protocol of the operative procedure. Our final goal was to provide immediate, constructive feedback. DESCRIPTION: We created a **computer** tutorial by generating three-dimensional wire-frame **models** of the **surgical instruments**. Next, we applied a surface to the wire-frame **models** using three-dimensional **modeling**. Finally, the three-dimensional **models** were animated to **simulate** the motions of an actual TKR. The tutorial is a step-by-step tutorial that teaches and tests the correct sequence of steps in a TKR. The student or resident must select the correct instruments in the correct order. The learner is encouraged to learn the stepwise surgical protocol through repetitive use of the **computer simulation**. Constructive feedback is acquired through a grading system, which rates the student's or resident's ability to perform the task in the correct order. The grading system also accounts for the time required to perform the **simulated** procedure. We evaluated the efficacy of this teaching technique by testing medical students who learned by the **computer simulation** and those who learned by reading the surgical protocol manual. Both groups then performed TKR on **manufactured** bone **models** using real instruments. Their technique was graded with the standard protocol. The students who learned on the **computer simulation** performed the task in a shorter time and with fewer errors than the control group. They were also more engaged in the learning process. DISCUSSION: Surgical training programs generally lack a consistent approach to preoperative education related to surgical procedures. This interactive **computer** tutorial has allowed us to make a quantum leap in medical student and resident teaching in our orthopedic department because the students actually participate in the entire process. Our technique provides a linear, sequential method of skill acquisition and direct feedback, which is ideally suited for learning stepwise surgical protocols. Since our initial evaluation has shown the efficacy of this program, we have implemented this teaching tool into our orthopedic curriculum. Our plans for future work with this **simulator** include **modeling** procedures involving other anatomic areas of interest, such as the hip and shoulder.

28/3,AB/13 (Item 3 from file: 155)  
 DIALOG(R)File 155:MEDLINE(R)  
 (c) format only 2003 The Dialog Corp. All rts. reserv.

08266576 94332637 PMID: 8055320

**CAD-based graphical computer simulation in endoscopic surgery.**

Kuehnepfel U G; Neisius B

Nuclear Research Centre Karlsruhe, Institute for Applied Informatics, Germany.

Endoscopic surgery and allied technologies (GERMANY) Jun 1993, 1 (3)  
 p181-4, ISSN 0942-6027 Journal Code: 9412631

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

This article presents new techniques for three-dimensional, kinematic realtime **simulation** of dextrous endoscopic instruments. The integrated **simulation** package KISMET is used for engineering **design** verification and evaluation. Geometric and kinematic **computer models** of the

mechanisms and the laparoscopic workspace were created. Using the advanced capabilities of high-performance graphical workstations combined with state-of-the-art **simulation** software, it is possible to generate displays of the **surgical instruments** acting realistically on the organs of the digestive system. The organ geometry is **modelled** in a high degree of detail. Apart from discussing the use of KISMET for the development of MFM-II (Modular Flexible MIS Instrument, Release II), the paper indicates further applications of realtime 3D graphical **simulation** methods in endoscopic surgery.

?

30/3/1 (Item 1 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

7569866 INSPEC Abstract Number: C2003-05-7330-010

**Title: Intraocular surgery on a virtual eye**

Author(s): Wagner, C.; Schill, M.; Manner, R.

Author Affiliation: Inst. for Computational Medicine, Mannheim Univ., Germany

Journal: Communications of the ACM vol.45, no.7 p.45-9

Publisher: ACM,

Publication Date: July 2002 Country of Publication: USA

CODEN: CACMA2 ISSN: 0001-0782

SICI: 0001-0782(200207)45:7L.45:ISV;1-B

Material Identity Number: C056-2002-009

U.S. Copyright Clearance Center Code: 0001-0782/02/\$0700 \$5.00

Language: English

Subfile: C

Copyright 2003, IEE

30/3/2 (Item 2 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

7417883 INSPEC Abstract Number: C2002-11-7330-481

**Title: State-of-the-art in orthopaedic surgical navigation with a focus on medical image modalities**

Author(s): Langlotz, F.

Author Affiliation: Maurice E. Muller Inst. for Biomech., Bern Univ., Switzerland

Journal: Journal of Visualization and Computer Animation vol.13, no.1 p.77-83

Publisher: Wiley,

Publication Date: Feb. 2002 Country of Publication: UK

CODEN: JVCAEO ISSN: 1049-8907

SICI: 1049-8907(200202)13:1L.77:SOSN;1-K

Material Identity Number: O582-2002-003

U.S. Copyright Clearance Center Code: 1049-8907/02/\$30.00

Language: English

Subfile: C

Copyright 2002, IEE

30/3/3 (Item 3 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6991745 INSPEC Abstract Number: C2001-09-7330-136

**Title: A MRI based semi-automatic modeling system for computational biomechanics simulation**

Author(s): Hayasaka, T.; Hao Liu; Himeno, R.; Yamaguchi, T.

Author Affiliation: Div. of Comput. & Inf.; Inst. of Phys. & Chem. Res., Wako, Japan

Conference Title: Proceedings International Workshop on Medical Imaging and Augmented Reality p.282-5

Publisher: IEEE Computer. Soc, Los Alamitos, CA, USA

Publication Date: 2001 Country of Publication: USA. xii+306 pp.

ISBN: 0 7695 1113 9 Material Identity Number: XX-2001-01281

U.S. Copyright Clearance Center Code: 0 7695 1113 9/2001/\$10.00

Conference Title: Proceedings International Workshop on Medical Imaging

and Augmented Reality

Conference Sponsor: Siemens Med. Syst.; Marconi Med. Syst.; Eur.-Chinese Soc. Clinical Magnetic Resonance; Surgi-Vision; Royal Soc./Wolfson Med. Image Comput. Lab., Imperial College; Cardiovascular Magnetic Resonance Unit, Royal Brompton Hospital; IEEE Eng. Med. & Biology Soc.; Eurographics Assoc.; Int. Soc. Magnetic Resonance in Med. (ISMRM); Visual Inf. Process. Group, Imperial College; Virtual Reality, Visualization & Imaging Res. Center, CUHK

Conference Date: 10-12 June 2001      Conference Location: Shatin, Hong Kong, China

Language: English

Subfile: C

Copyright 2001, IEE

**30/3/4      (Item 4 from file: 2)**

DIALOG(R)File    2:INSPEC

(c) 2003 Institution of Electrical Engineers.. All rts. reserv.

6957557    INSPEC Abstract Number: C2001-07-7330-286

**Title: An augmented reality navigation system for computer assisted arthroscopic surgery of the knee**

Author(s): Tonet, O.; Megali, G.; D'Attanasio, S.; Dario, P.; Carrozza, M.C.; Marcacci, M.; Martelli, S.; La Palombara, P.F.

Author Affiliation: MiTech Lab., Scuola Superiore Sant'Anna, Pisa, Italy

Conference Title: Medical Image Computing and Computer-Assisted Intervention - MICCAI 2000. Third International Conference. Proceedings (Lecture Notes in Computer Science Vol.1935)      p.1158-62

Editor(s): Delp, S.L.; DiGioia, A.M.; Jaramaz, B.

Publisher: Springer-Verlag, Berlin, Germany

Publication Date: 2000    Country of Publication: Germany      xxv+1244 pp.

ISBN: 3 540 41189 5      Material Identity Number: XX-2001-00241

Conference Title: Medical Image Computing and Computer-Assisted Intervention - MICCAI 2000. Third International Conference. Proceedings

Conference Date: 11-14 Oct. 2000      Conference Location: Pittsburgh, PA, USA

Language: English

Subfile: C

Copyright 2001, IEE

**30/3/5      (Item 5 from file: 2)**

DIALOG(R)File    2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

6950324    INSPEC Abstract Number: A2001-14-8770G-003, B2001-07-7520-013, C2001-07-7330-229

**Title: A novel navigation system for computer assisted orthopaedic surgery**

Author(s): Tonet, O.; Megali, G.; Dario, P.; Carrozza, M.C.; Marcacci, M.; La Palombara, P.F.

Author Affiliation: MiTech Lab., Scuola Superiore Sant'Anna, Pisa, Italy

Conference Title: Proceedings of the 22nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (Cat. No.00CH37143) Part vol.3      p.1864-5 vol.3

Editor(s): Enderle, J.D.

Publisher: IEEE, Piscataway, NJ, USA

Publication Date: 2000    Country of Publication: USA      4 vol. xxiii+3272 pp.

ISBN: 0 7803 6465 1      Material Identity Number: XX-2001-00102

U.S. Copyright Clearance Center Code: 0 7803 6465 1/2000/\$10.00

Conference Title: Proceedings of the 22nd Annual International Conference  
of the IEEE Engineering in Medicine and Biology Society  
Conference Date: 23-28 July 2000      Conference Location: Chicago, IL, USA  
Language: English  
Subfile: A B C  
Copyright 2001, IEE

**30/3/6      (Item 6 from file: 2)**

DIALOG(R)File    2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

5729737    INSPEC Abstract Number: C9712-7330-063

**Title: Real-time volume visualization of medical image data for diagnostic  
and navigational purposes in computer aided surgery**

Author(s): Hubner, M.; Kuhnappel, U.G.

Author Affiliation: Inst. fur Angewandte Inf., Forschungszentrum  
Karlsruhe GmbH, Germany

Conference Title: CAR '96 Computer Assisted Radiology. Proceedings of the  
International Symposium on Computer and Communication Systems for Image  
Guided Diagnosis and Therapy    p.751-6

Editor(s): Lemke, H.U.; Vannier, M.W.; Inamura, K.; Farman, A.G.

Publisher: Elsevier, Amsterdam, Netherlands

Publication Date: 1996    Country of Publication: Netherlands    xxxv+1112  
pp.

ISBN: 0 444 82497 9      Material Identity Number: XX96-02119

Conference Title: Proceedings of CAR'96: Computer Assisted Radiology-10th  
International Symposium

Conference Date: June 1996      Conference Location: Paris, France

Language: English

Subfile: C

Copyright 1997, IEE

**30/3/7      (Item 7 from file: 2)**

DIALOG(R)File    2:INSPEC

(c) 2003 Institution of Electrical Engineers. All rts. reserv.

5728227    INSPEC    Abstract    Number:    A9723-8770G-001,    B9712-7520-001,  
C9712-7330-027

**Title: A non-invasive patient registration and reference system for  
interactive intraoperative localization in intranasal sinus surgery**

Author(s): Hauser, R.; Westermann, B.; Probst, R.

Author Affiliation: Dept. of Otorhinolaryngology, Basel Univ.,  
Switzerland

Journal: Proceedings of the Institution of Mechanical Engineers, Part H  
(Journal of Engineering in Medicine)    vol.211, no.H4    p.327-34

Publisher: Mech. Eng. Publications,

Publication Date: 1997    Country of Publication: UK

CODEN: PIHMEQ    ISSN: 0954-4119

SICI: 0954-4119(1997)211:H4L:327:IPRR;1-K

Material Identity Number: N671-97005

Language: English

Subfile: A B C

Copyright 1997, IEE

**30/3/8      (Item 1 from file: 5)**

DIALOG(R)File    5:Biosis Previews(R)

(c) 2003 BIOSIS. All rts. reserv.



13966431 BIOSIS NO.: 200200595252

Interactive computer **-assisted surgical system and method thereof.**

AUTHOR: Brosseau Eric(a); Boivin Michel; Hamel Genevieve; Amiot

Louis-Philippe

AUTHOR ADDRESS: (a)Montreal\*\*Canada

JOURNAL: Official Gazette of the United States Patent and Trademark Office  
Patents 1262 (3):pNo Pagination Sep. 17, 2002

MEDIUM: e-file

ISSN: 0098-1133

DOCUMENT TYPE: Patent

RECORD TYPE: Abstract

LANGUAGE: English

**30/3/9 (Item 2 from file: 5)**

DIALOG(R)File 5:Biosis Previews(R)

(c) 2003 BIOSIS. All rts. reserv.

13652478 BIOSIS NO.: 200200281299

**Automatic analysis in virtual endoscopy.**

AUTHOR: Vining David J(a); Hunt Gordon W; Ahn David K; Stelts David R; Ge  
Yaorong; Hemler Paul F; Salido Tiffany W

AUTHOR ADDRESS: (a)Winston-Salem, NC\*\*USA

JOURNAL: Official Gazette of the United States Patent and Trademark Office  
Patents 1257 (1):pNo Pagination Apr. 2, 2002

MEDIUM: e-file

ISSN: 0098-1133

DOCUMENT TYPE: Patent

RECORD TYPE: Abstract

LANGUAGE: English

**30/3/10 (Item 3 from file: 5)**

DIALOG(R)File 5:Biosis Previews(R)

(c) 2003 BIOSIS. All rts. reserv.

12533880 BIOSIS NO.: 200000287382

**Real-time image-guided placement of anchor devices.**

AUTHOR: VomLehn John Christian(a); Carl Allen Lawrence; Khanuja Harpal  
Singh

AUTHOR ADDRESS: (a)Albany, NY\*\*USA

JOURNAL: Official Gazette of the United States Patent and Trademark Office  
Patents 1228 (1):pNo pagination Nov. 2, 1999

MEDIUM: e-file.

ISSN: 0098-1133

DOCUMENT TYPE: Patent

RECORD TYPE: Abstract

LANGUAGE: English

**30/3/11 (Item 1 from file: 6)**

DIALOG(R)File 6:NTIS

(c) 2003 NTIS, Intl Cpyrght All Rights Res. All rts. reserv.

2259367 NTIS Accession Number: ADA410205/XAB

Interactive **Medical Volume Visualization for Surgical Operations**

Ozkurt, A. ; Oz Mehmet, K.

Dokuz Eylul Univ., Izmir (Turkey). Dept. of Electrical and Electronics.

Corp. Source Codes: 081686004; 442212

25 Oct 2001 5p

Languages: English

John Sims EIC 3700 308-4836

Journal Announcement: USGRDR0313

Papers from 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, October 25-28, 2001, held in Istanbul, Turkey. See also ADM001351 for entire conference on cd-rom., The original document contains color images.

Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

NTIS Prices: PC A01/MF A01

**30/3/12 (Item 2 from file: 6)**

DIALOG(R)File 6:NTIS

(c) 2003 NTIS, Intl Cpyrght All Rights Res. All rts. reserv.

2197306 NTIS Accession Number: ADP010611/XAB

**Training Minimal Access Surgery Skills Within a Virtual Environment**

Kelly, M.

Ministry of Defence, London (England).

Corp. Source Codes: 002020000; 401566

1 Nov 2000 5p

Languages: English Document Type: Conference proceeding

Journal Announcement: USGRDR0116

Presented at the RTO Human Factors and Medicine Panel Workshop, Orlando FL, 5-9 Dec 1997, p3-1/3-5. This article is from ADA388966 The Capability of Virtual Reality to Meet Military Requirements (la Capacite de la realite virtuelle a repondre aux besoins militaires).

Product reproduced from digital image. Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)605-6900; and email at orders@ntis.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.

NTIS Prices: PC A01/MF A01

**30/3/13 (Item 1 from file: 8)**

DIALOG(R)File 8:Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05365370 E.I. No: EIP99094789950

**Title: Interaction model for 3D cutting in maxillofacial surgery planning**

Author: Neumann, Patrick; Siebert, Dirk; Schulz, Armin; Faulkner, Gabriele; Krauss, Manfred; Tolxdorff, Thomas

Corporate Source: Free Univ Berlin, Berlin, Ger

Conference Title: Proceedings of the 1999 Medical Imaging - Image Display

Conference Location: San Diego, CA, USA Conference Date: 19990221-19990223

E.I. Conference No.: 55282

Source: Proceedings of SPIE - The International Society for Optical Engineering v 3658 1999. p 324-331

Publication Year: 1999

CODEN: PSISDG ISSN: 0277-786X

Language: English

**30/3/14 (Item 2 from file: 8)**

DIALOG(R)File 8:Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

05105909 E.I. No: EIP98084355477

John Sims EIC 3700 308-4836

**Title: Increasing Spiral CT benefits with postprocessing applications**

Author: Kirchgeorg, Markus A.; Prokop, Mathias

Corporate Source: Siemens Medical Systems Ultrasound Group, Issaquah, WA, USA

Source: European Journal of Radiology v 28 n 1 Aug 1998. p 39-54

Publication Year: 1998

CODEN: EJRADR ISSN: 0720-048X

Language: English

**30/3/15 (Item 3 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

04946430 E.I. No: EIP97083775172

**Title: Surface reconstruction and visualization of the surgical prostate model**

Author: Xuan, Jianhua; Sesterhenn, Isabell A.; Hayes, Wendelin S.; Wang, Yue; Adali, Tulay; Yagi, Yukako; Freedman, Matthew T. M.D.; Mun, Seong K.

Corporate Source: Georgetown Univ. Medical Cent. and Univ. of Maryland/Baltimore County, Baltimore, MD, USA

Conference Title: Medical Imaging 1997: Image Display

Conference Location: Newport Beach, CA, USA Conference Date: 19970223-19970225

E.I. Conference No.: 23008

Source: Proceedings of SPIE - The International Society for Optical Engineering v 3031 1997. Society of Photo-Optical Instrumentation Engineers, Bellingham, WA, USA. p 50-61

Publication Year: 1997

CODEN: PSISDG ISSN: 0277-786X ISBN: 0-8194-2442-0

Language: English

**30/3/16 (Item 4 from file: 8)**

DIALOG(R)File 8: Ei Compendex(R)

(c) 2003 Elsevier Eng. Info. Inc. All rts. reserv.

03747663 E.I. No: EIP93111129377

**Title: Climbing CAD's learning curve**

Author: Dvorak, Paul; Teschler, Leland

Source: Machine Design v 65 n 18 Sep 10 1993. p 52-55

Publication Year: 1993

CODEN: MADEAP ISSN: 0024-9114

Language: English

**30/3/17 (Item 1 from file: 34)**

DIALOG(R)File 34: SciSearch(R) Cited Ref Sci

(c) 2003 Inst for Sci Info. All rts. reserv.

10038057 Genuine Article#: 478AK No. References: 13

**Title: Robotically assisted laparoscopic cholecystectomy - A pilot study**

Author(s): Lomanto D (REPRINT); Cheah WK; So JB; Goh PM

Corporate Source: Univ Roma La Sapienza, Div Gen Surg 2, Dept Gen Surg Surg Specialty & Organ Transplantat, Policlin Umb, Viale Policlin 155/I-00161 Rome//Italy/ (REPRINT); Natl Univ Singapore, Dept Surg, Minimally Invas Surg Ctr, Natl Univ Singapore Hosp, Singapore 0511//Singapore/

Journal: ARCHIVES OF SURGERY, 2001, V136, N10 (OCT), P1106-1108

ISSN: 0004-0010 Publication date: 20011000

Publisher: AMER MEDICAL ASSOC, 515 N STATE ST, CHICAGO, IL 60610 USA

Language: English Document Type: ARTICLE (ABSTRACT AVAILABLE)

30/3/18 (Item 2 from file: 34)

DIALOG(R)File 34:SciSearch(R) Cited Ref Sci  
(c) 2003 Inst for Sci Info. All rts. reserv.

06618140 Genuine Article#: ZF139 No. References: 10

**Title: Virtual reality training simulator for endonasal surgery**

Author(s): Hilbert M (REPRINT) ; Muller W; Strutz J

Corporate Source: UNIV REGENSBURG,HALS NASEN OHREN KLIN, FJ STR ALLEE  
11/D-93043 REGENSBURG//GERMANY/ (REPRINT)

Journal: LARYNGO-RHINO-OTOLOGIE, 1998, V77, N3 (MAR), P153-156

ISSN: 0935-8943 Publication date: 19980300

Publisher: GEORG THIEME VERLAG, P O BOX 30 11 20, D-70451 STUTTGART,  
GERMANY

Language: German Document Type: ARTICLE (ABSTRACT AVAILABLE)

30/3/19 (Item 1 from file: 73)

DIALOG(R)File 73:EMBASE

(c) 2003 Elsevier Science B.V. All rts. reserv.

11948244 EMBASE No: 2003060059

**Design and implementation of a PC-based image-guided surgical system**

Stefansic J.D.; Bass W.A.; Hartmann S.L.; Beasley R.A.; Sinha T.K.; Cash  
D.M.; Herline A.J.; Galloway Jr. R.L.

R.L. Galloway Jr., Department of Biomedical Engineering, Vanderbilt  
University, Box 351653, Nashville, TN 37235 United States

AUTHOR EMAIL: bob.galloway@vanderbilt.edu

Computer Methods and Programs in Biomedicine ( COMPUT. METHODS PROGRAMS  
BIOMED. ) (Ireland) 2002, 69/3 (211-224)

CODEN: CMPBE ISSN: 0169-2607

PUBLISHER ITEM IDENTIFIER: S0169260701001924

DOCUMENT TYPE: Journal ; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 25

30/3/20 (Item 2 from file: 73)

DIALOG(R)File 73:EMBASE

(c) 2003 Elsevier Science B.V. All rts. reserv.

07725916 EMBASE No: 1999202462

**Image guided surgery: Preliminary feasibility studies of frameless  
stereotactic liver surgery**

Herline A.J.; Stefansic J.D.; Debelak J.P.; Hartmann S.L.; Pinson C.W.;  
Galloway R.L.; Chapman W.C.; Goodnight J.E. Jr.; Stain S.C.; Peters J.H.;  
Weigelt J.A.

Dr. W.C. Chapman, Vanderbilt University Medical Center, 801 Oxford House,  
Nashville, TN 37232-4753 United States

AUTHOR EMAIL: will.chapman@surgery.mc.vanderbilt.edu

Archives of Surgery ( ARCH. SURG. ) (United States) 1999, 134/6  
(644-650)

CODEN: ARSUA ISSN: 0004-0010

DOCUMENT TYPE: Journal; Conference Paper

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 17

30/3/21 (Item 3 from file: 73)

DIALOG(R)File 73:EMBASE

John Sims EIC 3700 308-4836

(c) 2003 Elsevier Science B.V. All rts. reserv.

07724516 EMBASE No: 1999200931

**Robotic-assisted laparoscopic pyeloplasty: A pilot study**

Gyung Tak Sung; Gill I.S.; Hsu T.H.S.

Dr. I.S. Gill, Lap./Minimally Invasive Surg. Sec., Department of Urology,  
Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, OH 44195

United States

Urology ( UROLOGY ) (United States) 1999, 53/6 (1099-1103)

CODEN: URGYA ISSN: 0090-4295

PUBLISHER ITEM IDENTIFIER: S0090429599000308

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 18

**30/3/22 (Item 4 from file: 73)**

DIALOG(R)File 73:EMBASE

(c) 2003 Elsevier Science B.V. All rts. reserv.

07650031 EMBASE No: 1999131794

**In vivo determination of condylar lift-off and screw-home in a mobile-bearing total knee arthroplasty**

Stiehl J.B.; Dennis D.A.; Komistek R.D.; Crane H.S.

Dr. J.B. Stiehl, 2015 E. Newport, Milwaukee, WI 53211 United States

Journal of Arthroplasty ( J. ARTHROPLASTY ) (United States) 1999, 14/3  
(293-299)

CODEN: JOARE ISSN: 0883-5403

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 21

**30/3/23 (Item 5 from file: 73)**

DIALOG(R)File 73:EMBASE

(c) 2003 Elsevier Science B.V. All rts. reserv.

07393137 EMBASE No: 1998264062

**Virtual reality: Preparation and execution of sinus surgery**

Ecke U.; Klimek L.; Muller W.; Ziegler R.; Mann W.

Dr. U. Ecke, Dept. of Otolaryngol. Hd./Neck Surg., Mainz Medical School,  
Langenbeckstr. 1, 55101 Mainz Germany

Computer Aided Surgery ( COMPUT. AIDED SURG. ) (United States) 1998, 3/1  
(45-50)

CODEN: CAISF ISSN: 1092-9088

DOCUMENT TYPE: Journal; Article

LANGUAGE: ENGLISH SUMMARY LANGUAGE: ENGLISH

NUMBER OF REFERENCES: 18

**30/3/24 (Item 1 from file: 155)**

DIALOG(R)File 155:MEDLINE(R)

(c) format only 2003 The Dialog Corp. All rts. reserv.

11358382 98238794 PMID: 9577822

**[Development of a surgical simulator for interventions of the paranasal sinuses. Technical principles and initial prototype]**

Entwicklung eines Operationssimulators für Eingriffe an den  
Nasennebenhöhlen. Technische Grundlagen und erste Realisation.

Hilbert M; Muller W; Strutz J

John Sims EIC 3700 308-4836

Hals-Nasen-Ohrenklinik, Universitat Regensburg.  
Laryngo- rhino- otologie (GERMANY) Mar 1998, 77 (3) p153-6, ISSN  
0935-8943 Journal Code: 8912371  
Document type: Journal Article ; English Abstract  
Languages: GERMAN  
Main Citation Owner: NLM  
Record type: Completed

**30/3/25 (Item 2 from file: 155)**  
DIALOG(R)File 155:MEDLINE(R)  
(c) format only 2003 The Dialog Corp. All rts. reserv.

09444299 21216091 PMID: 11317798  
**3-D simulation of craniofacial surgical procedures.**  
Teschner M; Girod S; Girod B  
Telecommunications Laboratory, University Erlangen, Germany.  
teschner@LNT.de  
Studies in health technology and informatics (Netherlands) 2001, 81  
p502-8, ISSN 0926-9630 Journal Code: 9214582  
Document type: Journal Article  
Languages: ENGLISH  
Main Citation Owner: NLM  
Record type: Completed

**30/3/26 (Item 3 from file: 155)**  
DIALOG(R)File 155:MEDLINE(R)  
(c) format only 2003 The Dialog Corp. All rts. reserv.

09019477 20312922 PMID: 10853061  
**Interactive image-guided surgery system with high-performance computing capabilities on low-cost workstations: a prototype.**  
Roldan P; Barcia-Salorio J L; Talamantes F; Alcaniz M; Grau V; Monserrat C; Juan C  
Division of Neurosurgery, University Clinic Hospital, Valencia, Spain.  
pedro.roldan@uv.es  
Stereotactic and functional neurosurgery (SWITZERLAND) 1999, 72 (2-4)  
p112-6, ISSN 1011-6125 Journal Code: 8902881  
Document type: Journal Article  
Languages: ENGLISH  
Main Citation Owner: NLM  
Record type: Completed

**30/3/27 (Item 4 from file: 155)**  
DIALOG(R)File 155:MEDLINE(R)  
(c) format only 2003 The Dialog Corp. All rts. reserv.

07683419 93138668 PMID: 1487285  
**Interactive image-guided neurosurgery.**  
Galloway R L; Maciunas R J; Edwards C A  
Department of Biomedical Engineering, Vanderbilt University, Nashville, TN  
37235.  
IEEE transactions on bio-medical engineering (UNITED STATES) Dec 1992,  
39 (12) p1226-31, ISSN 0018-9294 Journal Code: 0012737  
Contract/Grant No.: SB 1 R29 NS28602-01; NS; NINDS  
Document type: Journal Article  
Languages: ENGLISH  
Main Citation Owner: NLM  
Record type: Completed

35/3/4 (Item 2 from file: 73)

DIALOG(R)File 73:EMBASE

(c) 2003 Elsevier Science B.V. All rts. reserv.

04331564 EMBASE No: 1990219627

**From computer tomography to organ model . A new instrument for surgical and orthopedic specialists**

VON DER COMPUTERTOMOGRAPHIE ZUM ORGANMODELL. EIN NEUES INSTRUMENT FUR CHIRURGEN UND ORTHOPADEN

Kliegis U.

Duppelstr. 71, 2000 Kiel 1 Germany

Medizintechnik ( MEDIZINTECHNIK ) (Germany) 1990, 110/3 (85-88)

CODEN: MDZND ISSN: 0344-9416

DOCUMENT TYPE: Journal; Short Survey

LANGUAGE: GERMAN

35/3/5 (Item 1 from file: 155)

DIALOG(R)File 155:MEDLINE(R)

(c) format only 2003 The Dialog Corp. All rts. reserv.

14088619 22163478 PMID: 12173880

**Task decomposition of laparoscopic surgery for objective evaluation of surgical residents' learning curve using hidden Markov model.**

Rosen Jacob; Solazzo Massimiliano; Hannaford Blake; Sinanan Mika; et al  
Department of Electrical Engineering, University of Washington, Seattle  
98195, USA. rosen@u.washington.edu

Computer aided surgery - official journal of the International Society  
for Computer Aided Surgery (United States) 2002, 7 (1) p49-61, ISSN  
1092-9088 Journal Code: 9708375

Document type: Evaluation Studies; Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

?

18/7/15 (Item 15 from file: 16)  
DIALOG(R) File 16:Gale Group PROMT(R)  
(c) 2003 The Gale Group. All rts. reserv.

03305386 Supplier Number: 44564221  
**High tech takes on medical manufacturing**  
Tooling & Production, p51  
April, 1994

**ABSTRACT:**

Growth in the medical equipment **manufacturing** market is a result of demand for less-invasive **surgical instruments** and disposable products, such as plastic instruments or latex rubber gloves. Alternate site surgery practices are also increasing the demand for medical instruments, furniture and lighting. Moreover, the aging population will require more diagnostic and monitoring tests. National health coverage will also increase the need for services. One new device, developed by Intergraph and DoverSystems, uses human **computer - aided design** (HCAD), according to Ken Cayton, executive director of medical systems, Intergraph. HCAD, which combines anatomical images and **computer - aided . design**, can be useful in designing products for use with the human body. These applications include prosthetic devices, bone replacements, medical implants, contact lenses, hearing aids, wheelchairs and surgical tools.

COPYRIGHT 1999 Gale Group



18/7/24 (Item 7 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2003 The Gale Group. All rts. reserv.

08029933 SUPPLIER NUMBER: 17365534 (THIS IS THE FULL TEXT)  
**Dynamic Computer Resources, Inc. uses I-DEAS Master Series software for computer-aided surgical planning and medical manufacturing.**  
Business Wire, p7271286  
July 27, 1995

TEXT:

MILFORD, Ohio--(BUSINESS WIRE)--July 27, 1995--Structural Dynamics Research Corporation (Nasdaq: SDRC) announced today that Dynamic Computer Resources, Inc. (DCR), provides a turnkey solution for surgical planning and medical manufacturing. Three-dimensional volumetric model data generated by medical imaging software is processed by DCR's data conversion programs and exported to I-DEAS Master Series(TM) software. The I-DEAS solid models help surgeons visualize patient information in preparation for orthopedic surgery.

Rick Ingram, DCR's vice-president of engineering, says, "The software to convert magnetic resonance imaging (MRI) or computed tomography (CT) scans of the human body into 3D models has been available for some time. Our system now makes it possible for surgeons and **manufacturers** of implants and prostheses to use this data with state-of-the-art **computer - aided design** and **manufacturing** software. This process generates 3D solid models that help users plan surgical procedures or to **design** products, such as artificial limbs or **surgical devices**."

Surgeons can now take full advantage of the design tools available in I-DEAS Master Series to plan an operation. For example, a 3D solid model of a leg bone can be studied and manipulated on-screen to investigate optimal surgical procedures. A library of plates, pins, screws, and other surgical hardware can be applied to the patient model. This is a tremendous improvement over the traditional 2D engineering approach of marking up X-rays.

According to Dr. Richard A. K. Reynolds, assistant professor of orthopedics at the USC school of medicine and orthopedic surgeon at Children's Hospital Los Angeles, "We use the I-DEAS system as a pre-operative planner. The technology provides several advantages over current methods. First, surgeons and other health care professionals can now work with 3D representations which greatly improves decision-making. Second, the system helps users determine surgical outcomes.

"In neuromuscular disorders, for instance, there are often angular or rotational abnormalities which affect gait. With the pre-operative planner, we can now determine the best method of correcting the bony deformity and be able to predict post-operative gait implications. Using a custom made model of the lower extremities and pelvis, surgeons can now determine the kinetics and kinematics of the lower extremity in each individual and then animate a 3D model to give a visual representation of pre and post-operative gaits."

18/3,KWIC/31 (Item 14 from file: 148)

DIALOG(R)File 148:Gale Group Trade & Industry DB

(c)2003 The Gale Group. All rts. reserv.

07175738 SUPPLIER NUMBER: 15050538 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**Medical imaging and CAD unite.** ( computer - aided design ) (CAE in Action)

Kempfer, Lisa

Computer-Aided Engineering, v13, n1, p20(1)

Jan, 1994

ISSN: 0733-3536

LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 455

LINE COUNT: 00037

**Medical imaging and CAD unite.** ( computer - aided design ) (CAE in Action)

ABSTRACT: Surgicad Corp and Intergraph's SurgiCAD **Design** program applies new technology to the **design** of artificial joints and prosthetics. The software, jointly developed by the two companies, combines medical imaging and **computer - aided design** (CAD) to develop solid models of anatomical structures. Data from computed tomography (CAT scans), magnetic resonance imaging (MRI) and ultrasound systems is combined with human anatomical data to provide new opportunities in radiology, orthopedic surgery and the **manufacture** of implant devices. SurgiCAD **Design** runs on Intergraph 2000 and 6000 systems, and Sun Sparcstation workstations. The models can be manipulated and provide accurate geometric relationships and measurements. The software...

Enter SurgiCAD **Design** . It enables users to create solid models of anatomical structures using human anatomical and physiological digital data from computed tomography (CAT scans), magnetic resonance imaging (MRI), and ultrasound. The merging of these technologies opens new opportunities in orthopedic **surgery** , radiology, and implant **device manufacturing** , says Dr. Shawn Hayden, Surgicad's CEO. He explains that the software allows medical device **manufacturers** , biomechanical engineers, researchers, and orthopedic surgeons to use solid models to determine the relationship between bone and device for a better fit. The software offers...

18/3,KWIC/32 (Item 15 from file: 148)

DIALOG(R)File 148:Gale Group Trade & Industry DB

(c)2003 The Gale Group. All rts. reserv.

06795067 SUPPLIER NUMBER: 14807903 (USE FORMAT 7 OR 9 FOR FULL TEXT)

**CAD and medical imaging: a perfect fit.** ( computer - aided design )

Phillips Mahoney, Diana

Computer Graphics World, v16, n12, p67(2)

Dec, 1993

ISSN: 0271-4159

LANGUAGE: ENGLISH

RECORD TYPE: FULLTEXT; ABSTRACT

WORD COUNT: 830

LINE COUNT: 00063

**CAD and medical imaging: a perfect fit.** ( computer - aided design )

...ABSTRACT: are being integrated more commonly in the medical field for use in medical education, treatment analysis and surgical planning. DePuy Inc uses Intergraph's Surgicad **Design** software to determine the fit of its surgical implants for individual patients for total hip, shoulder, knee and extremity replacements. The software generates NURBS-based models of the **computer - aided design** (CAD) information of various implant models and anatomical data collected from the patient's CT scan. Using this software, surgeons can choose better-fitting implant...

Similarly, **computer - aided design** and **manufacturing** technology has played an important role in the medical field in terms of the development and production of prosthetic **devices** and **surgical** implants.

DePuy Inc., a Warsaw, Indiana-based supplier of orthopaedic implants and related products, relies on the benefits of both technologies in its effort to...

18/3,KWIC/33 (Item 16 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2003 The Gale Group. All rts. reserv.

06744821 SUPPLIER NUMBER: 14556501 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Climbing CAD's learning curve. (computer-aided designing) (includes related article)**

Dvorak, Paul; Teschler, Leland  
Machine Design, v65, n18, p52(6)  
Sept 10, 1993

ISSN: 0024-9114 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 3766 LINE COUNT: 00295

ABSTRACT: Two medium-sized companies specializing in different fields have resorted to the use of **computer - aided design** (CAD) systems to compliment their human capital and achieve better leverage against larger and well-financed rivals. The companies, namely: STERIS Corp and Loopco Industries...

... sealed chamber until the instruments come clean.

The geometry of the sterilizing compartment itself is critically important because it plays a major role in getting **surgical instruments** sterile. To ensure a thorough washing, Steris designs adapters and holders for the minimally invasive **surgical instruments**, such as endoscopes, to be treated in its apparatus. Initially, this **design** process was a time-consuming cut-and-try type of endeavor. And in the fast-moving medical **instrument** field, new **surgical devices** come to market at a rapid pace. So that its compartment **design** efforts could keep up, Steris found it needed help in the form of a solid-modeling package.

"One holder took too long -- about 18 months...

DESCRIPTORS: **Computer - aided design --**

18/3,KWIC/34 (Item 17 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
(c)2003 The Gale Group. All rts. reserv.

06474146 SUPPLIER NUMBER: 13790074 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Replacing parts on nature's machines. (computer-aided biomechanical engineering)**

Puttre, Michael  
Mechanical Engineering-CIME, v115, n5, p58(4)  
May, 1993

ISSN: 0025-6501 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT  
WORD COUNT: 1613 LINE COUNT: 00131

ABSTRACT: Prosthesis industry biomechanical engineers are using computerized systems, similar to those used by automobile industry mechanical engineers, to **design**, analyse and **manufacture** orthotics, prostheses and **instruments** used for **surgical** implantation. Computer software companies are working with biomechanical engineers to develop CAD/CAM software for prosthesis and **surgical instrument manufacturers**

. New prosthesis CAD/CAM systems improve implanted devices and enhance human body adaption to them.

The idea that a car door panel is analogous to a hip replacement implant might draw skepticism. However, **manufacturers** of parts designed for the human body are in fact using many of the engineering tools common in the automobile industry and in other mechanical engineering applications. Specifically, **computer - aided design** has become effective when fitting man-made parts to the most complex of nature's machines: the human body.

According to Mark Luedtke, associate manufacturing...

...corners or sharp edges in the human anatomy," he noted. Because of this, the company selected CAD systems with solid and surface modeling capabilities.

Orthomet **design** engineers also develop medical **instruments** that support implant **surgery**. Since every implant requires special instruments used by the surgeon, these are often designed along with the part. Orthomet designs its instruments using the Personal...

?

? ds

| Set | Items   | Description                |
|-----|---------|----------------------------|
| S1  | 10      | AU='CUNNINGHAM R L'        |
| S2  | 5       | AU='MERRIL G L'            |
| S3  | 137     | AU='BROWN J M'             |
| S4  | 1       | E3,E4                      |
| S5  | 6       | AU='FELDMAN P G'           |
| S6  | 1       | AU='TASTO J L'             |
| S7  | 5       | S1 AND S2:S6               |
| S8  | 4       | S2 AND S3:S6               |
| S9  | 1       | S3 AND S4:S6               |
| S10 | 0       | S4 AND S5:S6               |
| S11 | 1       | S5 AND S6                  |
| S12 | 6       | S7:S11                     |
| S13 | 20681   | INTERACTIV?                |
| S14 | 636213  | COMPUTER                   |
| S15 | 100690  | MODEL?                     |
| S16 | 35610   | HEART                      |
| S17 | 20      | (S13 OR S14) (S)S15(S)S16  |
| S18 | 20      | S17 NOT S12                |
| S19 | 2676    | COMPUTER?(3N)MODEL?        |
| S20 | 42147   | SURGIC?                    |
| S21 | 5159417 | INSTRUMENT? ? OR DEVICE? ? |
| S22 | 6       | S19(S)S20(S)S21            |
| S23 | 6       | S22 NOT (S18 OR S12)       |

? show files

File 347:JAPIO Oct 1976-2003/May(Updated 030902)

(c) 2003 JPO & JAPIO

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200356

(c) 2003 Thomson Derwent

File 371:French Patents 1961-2002/BOPI 200209

(c) 2002 INPI. All rts. reserv.

?

? ds

| Set | Items  | Description                                       |
|-----|--------|---|
| S1  | 4      | AU='CUNNINGHAM RICHARD':AU='CUNNINGHAM RICHARD L' |
| S2  | 3      | AU='MERRIL GREGORY L'                             |
| S3  | 1      | AU='BROWN J MICHAEL'                              |
| S4  | 1      | AU='CONNACHER HUGH'                               |
| S5  | 3      | AU='FELDMAN PHILIP':AU='FELDMAN PHILIP G'         |
| S6  | 66     | PA=IMMERSION                                      |
| S7  | 66     | IMMERSION/PA                                      |
| S8  | 2      | S1 AND S2:S6                                      |
| S9  | 3      | S2 AND S3:S6                                      |
| S10 | 0      | S3 AND S4:S6                                      |
| S11 | 0      | S4 AND S5:S6                                      |
| S12 | 0      | (S1:S5) AND S6                                    |
| S13 | 3      | S8:S9   |
| S14 | 12060  | INTERACTIV?                                       |
| S15 | 121224 | COMPUTER?   |
| S16 | 16946  | HEART   |
| S17 | 3557   | SURGIC?(3N)(INSTRUMENT? ? OR DEVICE? ?)           |
| S18 | 10     | S14(S)S15(S)(S16 OR S17)                          |
| S19 | 10     | S18 NOT S13                                       |

? show files

File 348:EUROPEAN PATENTS 1978-2003/Aug W05  
(c) 2003 European Patent Office

? ds

| Set | Items | Description                                      |
|-----|-------|--|
| S1  | 11687 | COMPUTER()AIDED()DESIGN OR CAD                   |
| S2  | 2289  | COMPUTER? ?(3N) (MODEL OR MODELING OR MODELLING) |
| S3  | 53009 | SURGERY OR SURGICAL                              |
| S4  | 634   | HAPTIC   |
| S5  | 13758 | S1:S2  |
| S6  | 1     | S3 AND S4 AND S5                                 |

? show files

File 350:Derwent WPIX 1963-2003/UD,UM &UP=200357  
(c) 2003 Thomson Derwent

File 347:JAPIO Oct 1976-2003/May(Updated 030902)  
(c) 2003 JPO & JAPIO

?

| Set | Items   | Description   |
|-----|---------|---|
| S1  | 202865  | COMPUTER()AIDED()DESIGN OR CAD                        |
| S2  | 108383  | COMPUTER? ?(3N)(MODEL OR MODELING OR MODELLING)       |
| S3  | 33750   | (SURGERY OR SURGICAL)(3N)(DEVICE? ? OR INSTRUMENT? ?) |
| S4  | 2137438 | SIMULAT?  |
| S5  | 178876  | INTERACTIVE OR INTER()ACTIVE                          |
| S6  | 3833085 | DESIGN??  |
| S7  | 6437    | HAPTIC?   |
| S8  | 734380  | MANUFACTUR?   |
| S9  | 0       | S1 AND S3 AND S4 AND S5 AND S6 AND S7 AND S8          |
| S10 | 0       | S1 AND S3 AND S4 AND S5 AND S7                        |
| S11 | 1164    | S4 AND S7   |
| S12 | 306851  | S1 OR S2  |
| S13 | 1563    | S6 AND S7   |
| S14 | 75      | S11 AND S12   |
| S15 | 106     | S13 AND S12   |
| S16 | 121     | S14 OR S15  |
| S17 | 0       | S3 AND S16  |
| S18 | 26      | S8 AND S16  |
| S19 | 121     | S16   |
| S20 | 96      | RD (unique items)                                     |
| S21 | 76      | S20 AND PY<2002                                       |
| S22 | 4830585 | SURGERY OR SURGICAL                                   |
| S23 | 10      | S21 AND S22   |
| S24 | 66      | S21 NOT S23   |

? show files

File 2:INSPEC 1969-2003/Aug W5  
(c) 2003 Institution of Electrical Engineers

File 5:Biosis Previews(R) 1969-2003/Aug W5  
(c) 2003 BIOSIS

File 6:NTIS 1964-2003/Sep W1  
(c) 2003 NTIS, Intl Cpyrght All Rights Res

File 8:Ei Compendex(R) 1970-2003/Aug W5  
(c) 2003 Elsevier Eng. Info. Inc.

File 34:SciSearch(R) Cited Ref Sci 1990-2003/Aug W5  
(c) 2003 Inst for Sci Info

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec  
(c) 1998 Inst for Sci Info

File 73:EMBASE 1974-2003/Aug W5  
(c) 2003 Elsevier Science B.V.

File 155:MEDLINE(R) 1966-2003/Sep W1  
(c) format only 2003 The Dialog Corp.



? ds

| Set | Items   | Description   |
|-----|---------|---|
| S1  | 2966841 | COMPUTER?   |
| S2  | 188152  | INTERACTIV?   |
| S3  | 192     | INTER()ACTIVE   |
| S4  | 7710258 | MODEL?  |
| S5  | 2079738 | HEART   |
| S6  | 33742   | (SURGICAL OR SURGERY) (3N) (INSTRUMENT? ? OR DEVICE? ?) |
| S7  | 375     | S1 AND (S2:S3) AND S4 AND (S5:S6)                       |
| S8  | 2403    | S5 AND S6   |
| S9  | 0       | S1 AND (S2:S3) AND S4 AND S8                            |
| S10 | 0       | S1 AND S2 AND S3 AND S4 AND S5                          |
| S11 | 331     | S1 AND (S2:S3) AND S4 AND S5                            |
| S12 | 44      | S1 AND (S2:S3) AND S4 AND S6                            |
| S13 | 31      | RD (unique items)                                       |
| S14 | 13      | S1(3N) (S2:S3) (2N) S4(3N) S5                           |
| S15 | 0       | S1(3N) (S2:S3) (3N) S4(3N) S6                           |
| S16 | 13      | S14   |
| S17 | 6       | RD (unique items)                                       |
| S18 | 15      | S1(3N) S4(3N) S6  |
| S19 | 2134663 | SIMULAT?  |
| S20 | 6       | S18 AND S19   |
| S21 | 6       | RD (unique items)                                       |
| S22 | 6       | S21 NOT S17   |
| S23 | 45      | S1(S) S4(S) S6(S) S19                                   |
| S24 | 733848  | MANUFACTUR?   |
| S25 | 4131888 | DESIGN?   |
| S26 | 18      | S23 AND S24:S25   |
| S27 | 13      | RD (unique items)                                       |
| S28 | 13      | S27 NOT S22 NOT S17                                     |

? show files

File 2:INSPEC 1969-2003/Aug W4  
(c) 2003 Institution of Electrical Engineers

File 5:Biosis Previews(R) 1969-2003/Aug W5  
(c) 2003 BIOSIS

File 6:NTIS 1964-2003/Sep W1  
(c) 2003 NTIS, Intl Cpyrght All Rights Res

File 8:Ei Compendex(R) 1970-2003/Aug W4  
(c) 2003 Elsevier Eng. Info. Inc.

File 34:SciSearch(R) Cited Ref Sci 1990-2003/Aug W5  
(c) 2003 Inst for Sci Info

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec  
(c) 1998 Inst for Sci Info

File 73:EMBASE 1974-2003/Aug W5  
(c) 2003 Elsevier Science B.V.

File 155:MEDLINE(R) 1966-2003/Aug W5  
(c) format only 2003 The Dialog Corp.

?

ds

| Set | Items   | Description   |
|-----|---------|---|
| S1  | 2966841 | COMPUTER?   |
| S2  | 188152  | INTERACTIV?   |
| S3  | 192     | INTER()ACTIVE   |
| S4  | 7710258 | MODEL?  |
| S5  | 2079738 | HEART   |
| S6  | 33742   | (SURGICAL OR SURGERY) (3N) (INSTRUMENT? ? OR DEVICE? ?) |
| S7  | 375     | S1 AND (S2:S3) AND S4 AND (S5:S6)                       |
| S8  | 2403    | S5 AND S6   |
| S9  | 0       | S1 AND (S2:S3) AND S4 AND S8                            |
| S10 | 0       | S1 AND S2 AND S3 AND S4 AND S5                          |
| S11 | 331     | S1 AND (S2:S3) AND S4 AND S5                            |
| S12 | 44      | S1 AND (S2:S3) AND S4 AND S6                            |
| S13 | 31      | RD (unique items)                                       |
| S14 | 13      | S1(3N) (S2:S3) (2N) S4(3N) S5                           |
| S15 | 0       | S1(3N) (S2:S3) (3N) S4(3N) S6                           |
| S16 | 13      | S14   |
| S17 | 6       | RD (unique items)                                       |
| S18 | 15      | S1(3N) S4(3N) S6  |
| S19 | 2134663 | SIMULAT?  |
| S20 | 6       | S18 AND S19   |
| S21 | 6       | RD (unique items)                                       |
| S22 | 6       | S21 NOT S17   |
| S23 | 45      | S1(S) S4(S) S6(S) S19                                   |
| S24 | 733848  | MANUFACTUR?   |
| S25 | 4131888 | DESIGN?   |
| S26 | 18      | S23 AND S24:S25   |
| S27 | 13      | RD (unique items)                                       |
| S28 | 13      | S27 NOT S22 NOT S17                                     |
| S29 | 27      | S13 NOT S14 NOT S17 NOT S22 NOT S28                     |
| S30 | 27      | RD (unique items)                                       |
| S31 | 15      | S18 NOT S30 NOT S29                                     |
| S32 | 15      | S18 NOT S17   |
| S33 | 9       | S18 NOT S22   |
| S34 | 9       | S33   |
| S35 | 5       | RD (unique items)                                       |

? show files

File 2:INSPEC 1969-2003/Aug W4  
(c) 2003 Institution of Electrical Engineers

File 5:Biosis Previews(R) 1969-2003/Aug W5  
(c) 2003 BIOSIS

File 6:NTIS 1964-2003/Sep W1  
(c) 2003 NTIS, Intl Cpyrght All Rights Res

File 8:Ei Compendex(R) 1970-2003/Aug W4  
(c) 2003 Elsevier Eng. Info. Inc.

File 34:SciSearch(R) Cited Ref Sci 1990-2003/Aug W5  
(c) 2003 Inst for Sci Info

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec  
(c) 1998 Inst for Sci Info

File 73:EMBASE 1974-2003/Aug W5  
(c) 2003 Elsevier Science B.V.

File 155:MEDLINE(R) 1966-2003/Aug W5  
(c) format only 2003 The Dialog Corp.

?

| Set | Items   | Description   |
|-----|---------|---|
| S1  | 43680   | COMPUTER()AIDED()DESIGN                               |
| S2  | 242589  | SIMULAT?  |
| S3  | 1199392 | MODEL OR MODELING OR MODELLING                        |
| S4  | 42757   | (SURGICAL OR SURGERY)(3N)(DEVICE? ? OR INSTRUMENT? ?) |
| S5  | 701321  | INTERACTIVE OR INTER()ACTIVE                          |
| S6  | 2431400 | DESIGN  |
| S7  | 7446325 | MANUFACTUR?   |
| S8  | 4324484 | COMPUTER? ?   |
| S9  | 41      | S1 AND S4   |
| S10 | 2       | S8(3N)(S2 OR S3)(S)S4                                 |
| S11 | 0       | S5(3N)S8(S)S3(S)S4                                    |
| S12 | 8677    | S2 AND S3 AND S5 AND S8                               |
| S13 | 902     | S1 AND S12  |
| S14 | 683     | S13 AND S7  |
| S15 | 45      | S12 AND S4  |
| S16 | 83      | S9 OR S10 OR S15                                      |
| S17 | 68      | RD (unique items)                                     |
| S18 | 53      | S17(S)(S6 OR S7)                                      |

? show files

File 16:Gale Group PROMT(R) 1990-2003/Sep 04

(c) 2003 The Gale Group

File 160:Gale Group PROMT(R) 1972-1989

(c) 1999 The Gale Group

File 148:Gale Group Trade & Industry DB 1976-2003/Sep 04

(c)2003 The Gale Group

File 621:Gale Group New Prod.Annou.(R) 1985-2003/Sep 04

(c) 2003 The Gale Group